

Med K4841

Chimitybue of hay on cisi 15.5

## NAYLOR, KERRY, DNTGOMERYSHIRE. THE

## PINETCM:

max

$$
1 \text { 〇YNOPSIS OF }
$$

## ALL THE CONIFEROLS PLANTS

AT PRESENT KNOWA, wITII
1)ESCRIPTIONE. HIRTORY AND SYNONYMS,

ASO I COMPREHEMAE GYTEMATIC IADEX.
m
GEORGEGORDON, A.L.S.,
FORMERLY surerintendmat of the hortictlatulal. GAPDENS, 'HISWICK.

## Scromi EVdition

considerably enlahged ajd nacluming tur, robver supplement,
To whert 15 aldrem

- In Indar oi Popular A゙ames, EEnglish and Foreign, compitrd

"Heaven their variuus plants for use designa ; For housed Cedars, and for shipping Pines."-Driven.


## LONDON:

HENHI G, ROHN, HENRH:TYA STRELT, (OUENT GARIEN, shmplei, marshall \& co. stitioners hall cocrt. 1875.

11789436


## PREFACE

IO THE lIHST LDITION. Mar 31Er, 1858.

Wirn the view of rendering the present work useful to those maequainted with the seience of botmy, the auther has thronghout ained at the utmost simplieity in language and arangement. The apphabetieal mode has therefore been adopted in reference both to the Genera and Speeies by means of which any Conifer, of which the name is known, may be immediately found. And for the nse of those who possess some botanieal knowledge, a dinguostie table is pretixed.

The deseriptinns of the Cenera are comprehensive though concise: and each species is accompanied loy all its symomes, with the authorities for them. Care has alou been taken to furnish such information respecting hatbits, value, products, dec., as is likely to be required ly the planter or cultivator.
'Hre lolume is completed by an Index eontaining nearly 1700 names.

In conchsiun, the author begs to acknowledge with thanks the valuable assistance afforded by his foreign eorrespondents, particularly those in Ciermany, France, and Mexieo. He desirus alao to express his ohligations to Mr. R. Pince, of the Gireat 1:xcter Suresp, and Mr. H. Law, of the Clapton Nusery.

## PREFACE TU THE SUPPLEMENTARY YOLUME PじBLISHED FEB. 13 Th, 1862.

1. producing a Supplement to the Pinetum at the present time it is only nevessary to refer to the frequent introduction of now Cinifers, or what are said to be new oney, togother with the mutability of names, and the Babylonian contusion which still
exists in their nomenclaturc. The trade lists, too, with some praiseworthy exceptions, abound with numerons uliuses, as may be seen by a slight comparison of such lists with the ample indexes given at the end of the volune, where all the synonyms a:c printed in Italics.

Amongst tho additional species and varieties recorded in the present Supplement, will be found several which have not before been enumerated, together with other information of a recent date, particularly the identification and correction of M. Koczl's Mexican Pines; and the notification of some errors of long standing in books of authority ; the whole being completed with an Index, containing all the systematic names to be found in the present Supplement, which amount to npwards of 580 .

In conclusion, the Author desires to express his thanks to those noblemen and gentlemen who have so likerally furnished him witl materials for examination, and, at the same time, informed him of the sources whence they received their plants, thus enabling him to direct his attention to such establishments as were most wortly of notiee, not only for the great extent of their collections, but for general accuracy in nomenclatnre.

He also wishes to express his obligations to Mr. John Standish, of the Ascot Nursery; Messrs. Osborn, of Fulham; Mr. Robert Glendinning, of Chiswick; Ahr. Willian Paul, of Waltlam Cross ; Mr. William Wood, of Maresfield; Mr. Alexander Dancer, of Fulham; Mr. Richarl Smith, of Woreester, and Messrs. Rollison, of 'Tooting, for inceful information aud specimens sent for examination.

## PREFACE TO THE PRESENT EDITION.

The author having been called upon for a new edition of his work, the former being now out of print and extromely searce, feels that he has little more to say than to repeat his thanks to the various growers of Coniferae to whum he hain been formerly indebted, and to add the names of John Dollin Bassett, Eiry, of Leighton Buzzard, Bedfordshire; Henry Ci. Bohn, Esp. (the publisher, who has a fine collection of Conifere, and has contributed the Popular Index to the present edition, and the following Nurserymen - Mr. Anthony Waterer, Knaphill Nursery, Woking; Messts. Willian Barron de Som, Elvatton Nurseries, Derly; the Lawson Company, Edinburgh; Als: Maurice Young, Milford Nursery, (iodahing; Mr. Criplis, Tunbridge Wells; Messrs. James Veiteh \& Suns, Chelsea; Mr. John Scott, Merriott, Somerset; and Mr. William Bueklev, late of the Tooting Nursery; all of whom have furnished specimens and information of great value to the work.

(IEORGE GORDON.

Fubruary, $18 \% \%$

## TNTROTOUCTJOS.

The term Conifere, or cone-bearing trees, is very expressive of the Tribe to which the present Volume relates.

Regarded from almost every point of view, this Tribe possesses great importance. In the northerm regions its members ontnumber the common, broad-leaved trees, by about ten to on ; they are most of them distingnished for majesty or symmetrical gracefulness; and their timher, from its length, stiaightness, and strength, is most vahuble in the Arts.

It is in North Ameriea that the most extensive Pine forests are located; some of the Pine barens, as they are there ealled, being from 300 to 500 miles in extent. C'aptain Hall states, that while travelling in Ceorgia, sometimes when he came to a high knoll which overluoked the surmmeling conntry, nothing could be seen but a vast ocean of Pines, stretching without a break in every direetion as far as the eye could reach.

Perhaps, however, the most gigantic specimens exist in Califormia, and on the North-west C'oast, where the dimensions of snme appear alunst fabulons. Ainong these we may mention more particularly Wellingtonia, Seqnoia, and Picea nobilis, all of which grow, in fat womble situations, from 200 to 3100 feet high.

Lmmense Fir and Pine forests abound also in Sweden, Norway, Ruscia, Poland, and Jruwia; "innagine (says Dr: E. D). (larke) the Gulf of Bothnia to be smrounded hy me continuous mbroken forest, as ancient as the world, and consisting of Pine-trees-then you will have: a general and corrent untion of a real Pine forest."

In the temperate and northern zones of Europe and Asia, the Conifers enjoy a wide range, extending even to the regions of perpetual snow. In South America, some kinds, such as the Araucarias, differ considerably in general aspect from the
true Pines : and still more so in Australia and Polynesia, with respeet to the Phylloeladus, the Dammara, and the Dacerydium ; hut all producesimilar timber and seeretions. These secretions which are always in the form of resinons juices, differ much in properties, and may be divided into two elasses; those olltained from the living tree by incisions in the bark; and those obtained from the wood and roots after felling, by the applieation of heat. Among the former ary liquid balsam, the common black and yellow resin of the shons, with oil rud spirits of turpentine ; among the latter are tar, piteh, and laup-black. The Strasburg and Venice turpentine come from the Silver Fir and Common Larch, and the best yellow resin (so much used in the manufacture of yellow soap) from the Norway Sprice Olibanum and Sandarae are fron the Junipers, and some of the finer resins and gums from the Dammara, Arancaria, and (allitris.

The soil preferred by Pines in a natmal state (and therefore the most congenial to them), is that composed of the debris of granitie rock, with a dry subsoil. They will, however, grow anywhere, excepting on ehalky formations, and land surcharged with moisture (although some of the Ameriean kinds flomish under this latter condition). The Firs (of which class the roots run immerliately under the surface) do not require a deep soil, but they will not produce large and fine timber withont a sandy loan and cool subsoil.

It would be beyond the purpose on the present necasion in detail all the uses of this important tribe. I may, howerer, observe, that the yellow deal of Europe is the produce of Pinus sylvestris; the Norway white deal that of $\Lambda$ bies excelsa; and the white American pine that of Pimes Stinbus. All of these itre, besides their other uses, of the greatest value to man in the construction both of his habitation on the earth, and of the arks which bear him and his treasures in safety through the fathomless deep.

The natural Order Coniferaz or Pinaces is gencrally divided into three families:-vio., Abictinere, Cupressinere, and Juni-
perinere; and although attaining, as many of them do, to huge dinensions and great utility as timber trees, they possess an organization inferior to that of other forest trees, aud are classed by botanists under the term Gymnospermue (naked seed), because the female flowers have no periearpal covering, but consist of naked ovules, to which fertilization is commmicated directly from the pollen, without the interposition of style or stigma, and which is analogons to the ora of reptiles in the animal kingrlom. The male flowers consist of catkins, formed of a number of seales, in the body of which the pollen is contained, in two or more cells, white the female organs, or nakel ovules, originate from the large scales of the cones, towards their base.

In the section Abietinee are placed the Genus Pinns, Abies, Picea, Larix, P'seulo-harix, Cedrus, Araucaria, Dammame, Cumninghamia, and Sciadopitys, all of which are timber trees, distinguisleel by their slender, needle-like, or flat linear and laneeolate leaves, and branches in whorls, the lower ones always dying off as the trees grow old. The leaves and cones also differ essentially in the different Genera. In that of Pist's (the true Pines) the lenves are long, slender, and in bundles of twos, threes, or fives, each set being enelosed at the base in a scaly sheath, and with the fruit a cone, composed of persistent seales. In the Genus Abies (the Spruces) the leaves are solitary, more or less seattered round the shoots, or somewhat tworanked in their direction, as in the Hemlock Spruce, and with the cones in a drooping position, and composed of persistent seales. In the Genus Picea (the Silver Firs) the leaves are flattened, linear, or lanceolate, white beneath, and mostly arranged on the upper side of the shoots, in a more or less peetinated manner; the cones are ereet on the upper side of the top branches, and composed of deciduous scales, which fall off' the axis when the seeds are ripe. In the Genus Larix (the Larches) the leaves are linear, soft, rounded at the points, deciduous, and disposed in groups on the adult parts of the tree; the cones are small, erect on the upper side of the branchlets,
and composed of loosely-placed persistent scales. In the Gemus Preublo-hame (the Chinese Larch) the leaves are long, linear, soft, deciduous, and disposed in tufts, or bundles on the adult branchlets, and with the cones rather large, pendulous, and composed of very deciduous and divergent seales. In the Genus Cbinus (the (eelins) the leaves are in tufts on the adult parts, persistent and evergreen; with the cones erect on the upper surface of the larger branches, and the scales more or less deciduous after the seeds are ripe. From the trine Abietinea Professor Link has, in a very able article on the Genus Pinus, separated the Genera, comprising Dammara, Cunninglamia, and Araucaria, into a New femily, under the mame of Dammanderis, not only on account of the breadth and expansion of their leaves, but from their containing spiral vessels sufficiently large to be easily perceptible in the leaves, produced on the oider wood,* and from the inverted position of the female blossoms.

In the Cupresstapes all the branches are seattered along the main stem, the lateral ones being densely furnished with slender branchlets clothed with scale-like leaves, mostly imbricated in four rows on the adult plants.

In the Juniperinees the fruit is a lind of berry (Galbulus), emmposed of a fleshy or fibrous juicy sulistance, covered with a glossy skin, and furnished externally with minute scales.

The Taxaces, or Yew family, although not properly coniferous plants, as they do not bear cones, and have contimusus inarticulate branches, the wood of which have ligneous tissue, marked with circular disks, are still classed with conifere in all popular enumerations, being considered as of the same character and general habit of growth.

[^0]
## A NATLTAL ARRANGEMENT

of

## ald TIIE GENERA ENUMERATED IN TIIE PINETUM.

## Order I. Pinacee, the Pine Race.

Thme I. ABIETINEF, the Fir Tmbe, laving numerous scales, arranged on a more or less elongated axis on the cones, and with the ovules inverted or pointing to the axis.

Sec. I. ABHETLNEAE VEliAF. Cones with mumerous scales arrangel on a more or less elongated axis.
Ger. I'tives, Limurus (the True I'ines). Leaies in sleaths of two, three, or five, somewhat cylinulrical and persistent.

Flinecres, male and female on the same plant, but separate.

C'mes more or less conical, woody, and composed of seales.

Secds oval, with a lard, bony shell, and either furnished with an ample wing, or wingless.
lst division, linse, or those kinds having two leaves in a slieath.
2nd division, Ternite, or those kinds having three leaves in each sheatll.
3rd division, Quine, or thoso kinds haviug five leaves in each sheath.

Gen. Abies, Don (the Spruces). Leates solitary, four-sidinl, and scattered all round tho shoots, or flat, and more or less in two rows laterally.

Flowers, malo and female on the samo plant, but scparatc.

Cones pendent, solitary, and terminal, with thin persistent seales.
lst division, Vers, or the true Spruecs, with four-sided leaves, scattered all round the shoots.
2ud division, TsLeqa, or those kinds with flat leaves, more or less in two rows, like tho Hemlock Spruce, and glaucous bclow.
Gen. Pree., Don (tho Silver Firs). Leares solitary, flat, silvery bencath, and pectinated in two or more rows.

Flowers, male and female on tho same plant, but scparate.

Cones crect, cylindrical or nearly so, axillary on the upper side of the branches, and with thin, deciduous scales when ripe.
1st division, Bhacteata, or those kinds with tho bracteas longer than the scales of the cone.
Ind division, Mrevibracteata, or those kinds with the bracteas shorter than tho seales of the cone, and hidelen.
Gen. Larix, Link (the Larehes). Leures deeiduous, lincar, soft, and produced in bundles on the adult branches.

Flowers, malo and female on tho same plant, but separate.

Cones crect, small, oval, or somewhat cylindrieal, with persistent thin seales of a leathery toxture, with a dorsal bractea.

Scelds sinall, with a leathery covering and mombranaccous wings.
Gen. Pseudo-lamix, Gordon (tho Falsc Larch). Leares deciduous, flat, lincar, soft, and collected in bundlics on the adult branches.

Flowers, male and femalo on the same plant, but scparate.

Cones pendent，oblong，ruther large，brittle，and eovered with clivergent seales，which are very deciduous， pointed and extended at the apex，and heart－shapel at the base．

Secds irrenularly shaped，with a soft thin covering， ant ample wings．
Cien．Cepres，Liuk（the Cedans）．Lorues persistent，needle－ shaped，somewhat foum－sided，stiff，and disposed in bundles on the adult branches．

Fluters，malo and female mostly on tho same plant， but sepratate．

C＇ines erect，ovate，bluntly deprossed at the ends， axillay，and growing on the upper side of the branehes， with thin，elosely－plaeed seales，more or less deeiluous．

Secels somewhat ancrular，with a soft tegumental covering，full of turpentine，and ample，persistent wings．
sic．H．ARATC：IRLE S＇cules one－seded．
Gen．Ariucurin，Jussieu（the Araucarias）．Leures seale formed，persistent，aml whest at tho hase．

Floucers，mate and female on separate plants．
Cones nostly large，ghobular，and terminal ；with tha scales decidnous，or partially s：o．

Seeds moro or less attached to the scales．
Sec．I．Colcmbea，or the true Arancarias，with broad－ lancolato leaves，and seed－leaves germinating under ground．
Sec．II．Lutacta，or Falsu Araucarias，with awl－shaped leares，and sech－leares produced above ground．
Gen．Dimman．，Rumphius（tho W＂ax I＇ines）．Leaves broad， that，petiolated，opposito or alteruate，and leathery．

Flowers，male and female on separate plants．
Cones ovate or globular，axillary，and with persistent scales，wauting the dorsil bractea．

Secds unattached and solitary．
See．HII．CじNNLN゚illimilf．Seeds free，and from three to seven under each seale．

Gen. Cunninghama, li. Brourn. Leares lanecolate, rigid, and flat.

Florers, male and female on the samo plant, but separato and termizal.

Concs small, ovate or globular, and ligneous, with persistent, acute-pointed seales, having no dorsal braetea.

Seeds, three under each scale.
Gen. Artmiotaiss, Don. Leaves sealo-formed or lance-shaped, and either elusely inlaying along the shoots, or more or less spreading.

F'lozcers, male and female on the same plant.
C'ones oval, or globular and ligneons, with oval, entire, imbrieated scales, destitute of the dorsal bracten.

Secds, from three to five under each seale, with thin erusty shells and hardly any wings.
Gen. Schadorifys, Siclold (Ulie Tarasol Pine). Leaves linear, flat, persistent, and in whorls.

Flowers, male and female on the same plant, but separate.

Cones elliptie or cylindrical, obtuse at the ends, large and solitary, with wedge-shaped, persistent, thin, leathery scales, regularly imbrieated, and furnished with a short dorsal bractea.

Scells elliptie, compressed, and seven under each seale, with a leathery covering, tapering into a membranaccous wing, attenuatiug to the base.

Tribe II. CUPRESSEE, the Cypress Tribe. Cones with few valvato or peltate scales on a depressed axis, and ovules erect.

Sec. I. CUPRESSLNEE. Cones with the seales vertieillate or deenssately dispused.
Gen. Cupressus, Tournefort. Latices seale-formed, regularly and closely imbricated in four rows.

Flowers, male and female on the same phant, but separate.
('mos globular, and compused of angular, thick, woody seales, shieh shaperl externally.

Necels numerntis, angularly compressed, free amel wingerl on tho margins.
Gen. Chameevpam-, Simelh. Lpetces scale-formerl, in opposito [airs, four-ruwed, with a flami ur sunken groove on the bark, glaucous and I w-istent.

Flowers, male anl femalo on tho same plant, but separate.

C'ones globular or mblung, small and worly, with mostly geven seales, in opjwite alternate pairs.
scends convex, hard-shelled, awd in twos at the hase of the sodes, in sunkeln grouves, and either wingless or very slioftly furni-hel with rudimentary ones.



Flowers, male and finale on the same phut, but suparate.

C'mes Emall, globular, wonly, and with from five to six "lperite pairs of molle, fhichl-shapeel on tha top.

Ster ls, two at thu base of each scale, ing grooves, cuatud with resin, aud furnished with membranaceous wings.
Corn. Eirz-lioys, Hanker. Lames in wherls of three, but some-
 stalks, and more or less -p mealing.

Flowers, male and female ons separate plants.
Comes, star-like hories, cons-istine of ninp scales, in Whorls of there, with their cedges bent ontwarls.

Semen, mostly three under ench fertile scale, survomdenl ly a broad wing, the centhal one athached to the scale, the uther two to the axile.
 Hombent, and regularly imbricated in fur rows.

Flumis, males and female on separate piant=, aml turminal.

Cones very small, globular, and composeal of fune
seales, the outer two of which are short and abortive, and the iuner two larger and fertile.

Secels in twos or threes under each of the fertile scales, alnost round and amply three-winged.

Gen. Biota, Don. Leaves scalc-like, very small, in opposite pairs, flattened, and imbricated in four rows.

Flowers, male aud female on the same plant, but separate.

Cones roundish, squarrose, leathery, and composed of from six to eight valves or scales, iu opposite pairs, peltated on the top.

Sceds in twos under each seale, crustaceous and wingless.

Gen. Thuiorsis, Sicbold. Leaves seale-formal, opposite, regularly and elosely imbricated in four rows.

Flowers, male and female on the same plant, but separate.

Cones somowhat globular, woody, aud composed of eight or ten valvated, smooth scales.

Seeds in fives, at the base of each seale, orbicularly compressed, and furnished with a membranaceous wing on each side.

Gen. Thoja, Linnaus. Leaves in opposite pairs, compressed, very small, seale-formed, imbricated, and mostly unequal in sizo.

Flowers, male and female on the same plant, but separate.

Cones ovate-oblong, terminal, leathery, with from four to six seales, in opposite pairs, and nnequal in size.

Seeds in twos at the base of each seale, and furnished with transparont wings.
Gen. Libocednus, Endlicher: Leaves seale-formed, in opposite pairs, and imbrieated, in four rows, the upper and under ones being much the smallest.

Flowers, male and female on the same plant, but separate.

Cones oval, more or less obtuse, leathery, and composed of from four to six scales, which are but slightly eoncave on the inner face, and with the lower ones much the smallest.

Seeds singly or in twos under each scale, and unequally two-winged.

Gen. Cabimpme, Fontenat. Leutes very small, seale-formed, in alternate opposite pairs, close at the base of the juints, and with a gland on the back.

Flouers, male and female on the saine plant, but separate.

C'ones ghobular, or somewhat four-sided, and composed of four valred wooly seales truncated at the top, and with the alternate pair smallest.

Seeds, one or two at the base of each sate, slightly compressod, or tluee-edged, and winged on meh side.

Fin. Fimenela, Mirbel. Luates mostly termate, scale-formed, and deeurrent.

Flincers, male and female on the same plant, but separate.

Cones globular or conical, and formed of six valvated scales, the alternate ones being muel the smallest.

Seeds numerons under each scale, more or less angular, and laterally winged.
(ien. Windminatona, Entlieher. Leaves alternate, or in whorls, linear or neexllu-shaped, and spreading on the braneles, but very small, scale-formed, and somewhat imbricated, with a gland on the back, in the adult branehlets.

Flowers, male and female on the same plant.
Cones globular, and composed of four valves or scales, somewhat in a whorl, round a depressed axis, and couverying at the sides.

Secels few, from abortion, and mostly in twos; but with from five to ten ovules at the hase of each seale, in no or $t w$ serins, with $a$ crustacrous covering, spreadine on each side into membranateous winge.

Gen. Actinostrobus, Miquel. Leures in whorls of there, vory small, scale-formed, persistent, and very aente-pointed. Flouers, malo and female on the same plant, but scparate.

Cones globular, woody, and compused of six scales, dispused in two vertical sets at tho base.

Secels in lwos muler cach of the upper scales, throoedgerl, and winged on cach side.

Sec. II. TAXODIE Cones with the seales spirally disposed.
Gien. Gimptostronus, F̈nallicher. Leures seattered, spreading, variously slaped, and trigonal or subulate.

Flowers, male and female on tho same plant, but separate.

Contes egrg-shaped or oblong, and composed of several unequal-sized scales, all rising from the base, and of a leathery texture.

Secels in twos and winged, or wingless.
Gen. Thanobren, Richurd. Leeres linear, two-rowed, and decirluous.

Fluzers, male and femalo on the same plant, hut sepmate.

Cones glubular, woody, and with the scales shicldshajred.

Seeds irregularly slaped, wingless, woody, and in twos.

Gen. Skquona, limulicher. Lenees linear, flat, gersistent, and spread out in two rows horizontally.

Flowers, male and female ou the same plint, but separate.

C'ones small, globular, and woody, with peltate, werlgeshaped scales, having a spiny point in the centre.

Seceds mostly in threes uuder cach scale, variously shaped and winged.

Ger. Wendingtonia, Lindley. Leures needle-shaped, spiall, and spreating, or scale-formed and imbricated on the adult trees.

Flowers, male and female on the same plant, but selpate.

Cones: large, obtusely oval, woolly, terminal, anil solitary, with peltate, wedge-shaped scales, placed spirally at richt angles upon the axis.

Seels narrow, with a blunt pmint at the apex, and furnished with broad, flat, thickish, oval, pale, memlimaceuns wings, fiequently unequally sided, amiculaten at the base, nul two lines loug, and rather more than one line broad ; the seeds are mostly in fives under each scale.
Cien. Crrptoweha, Don. Laures irrogularly four-sided, sickleshaperd, acutmpinted, seattered, decurrint, spreadius, and pervistent.

Findere, matu ant female an tho sano plant, but separate.

Cones sflobular and worrly, with leltate, weder-shaperd seales, furni-hed on the lack with broad, recurved, spiny prointa.

Seels from three to five, angularly flattened, and wingrel on the sides.

## Tribe ILI. JUNIPERE.E, the Juxiper Tribe.

Fruit, a glohular kind of lerry, compmed of a fleshy or fibrons juicy substance, curerell with a glossy skin, nore or less angular, aud furnished exterually with minute seales.
sieds hard, buyy shelleel, cither comectal together or unconuected, and from one to five in number.

Lentes simple, opposite, or temate, lanceolate, or scalp-formed, and cither in extembed wherls, or closely inhriated in four rows.

Ger. Juxiperces, Linurrus. Leares opposite or termate, lanceolate, of seale formed, and cither in extended whorls, or chamly intrieated in furur rows.

Flourers, male and fenale un dilferent plants.

F'ruit, a globular berry, furmished with mimute scales.
Sceds from one to five, either connected or unconnected internally, and covered with a hard bony shell.
Sec. I. OXYCEIDRUS, the True Junipers.
Leaves in whorls of three, sprealing, jointed at the base, and glandless on the adult plants, with the buds perulated.
Sec. II. SABLNA, the Savin Junipers.
Ledues in opposito pairs, mostly awl-shapel, and loosely imbrieated on the adult plants, with the buds naked.
Sec. III. CUPIRESSOIDES, tho Cypress-like Junipers.
Leates in opposite pairs, four-rowed, sinall, scaleformed, and very closely imbricated on the adult. plants.

Fruit more or less angular externally.

## Order II. TAXACEE, the Yew Race.

## 

Fruit more or less drupaceous, and naked on the upper part.
Gen. Thxus, Smith. Leares on short foot-stalks, linear, decurrent, two-rowed, and alternate.

Flowers, male and female on separate plants.
Fruit solitary, and composed of a fleslyy open eup, of a scarlet colour, and viscid.

Sceds solitary, nut-like, with a crustaccous shell, free and exposed at the top.

Gen. Tonreya, Arnatt. Leuves linear-lanceolate, decurrent at the base, and either opposite or alteruate.

Floucrs, male and female on soparate plants.
Fruit drupaceous, or fleshy outside, and naked at the point.

Seeds singly in each fruit, with the kernel ruminated like the inside of the common mutmeg, and covered with a hard, smooth, bony shell.
Gen. Cermalotaxus, Sihbold. Leares lincar, alteruate, or opposite, and in two rows.

Flocers, mate aud female on separato plants.
Fruit drupaceous, and two or three in a head.
Seeds solitary, nut-like internally, and with a bmy shell, cuclosed in a fleshy covering, but naked at the print.
(fen. Salisibura, Sinith. Leares fin-shaped, onl long foot-stalks, lohed, or jasged on the margins, and covered on both sides with fan-shupeel straight nerves.

F'torers, male and fomale on sepratate plants.
Fruit drupaceous, mostly single from abortion, and enelosed at the baze in a sumall fleshy cup.

Secds solitary, aud covered with a hard lony slell.
(ien. Phymoctancs, Richurd. Laures minute seale-like borlies on the margins of the lranchlets. Brunchlets leaf-like, opprsite, pimmated, or fam-shaped, and feather-uerved.

Fluners, male and female separate, but on the same plant.

Fruit in small comected heads, with a fleshy disk.
Seeds solitary, very small, half cnelosed at the base, and uut-like, with a thin shell.

## Thibe: II. podocarpeet, the Podocarpus Tribe

Floters moncecious or dieccious.
Fruit drupaceous, seeds inverted.
Leures linear or lanceolate, and one or many nerved.
(ien. Podocampes, Lilleritier. Leares cither opposite, alternate, or scattered, linear or oblong, and one-nerved.

Floucers, male and female mostly on seprate plants, but sometimes monceciuns.

Fruit drupaceous, inverted, and adheriug.
Seeds bony sholleet.

Sec. I. ETPOIDOCARPL'S, the True Podocarpus.
Lecres alternate, or scattered and linear.
Fruit solitary, with a flcsly receptaele connectod with the bracts ly the axis of tho sloort spike.
Sec. II. STACIIYCARPUS', the Spikc-fruited Podocarpus.
Lecares altornate or in two rows, and linear.
Floters in spikes, provided with braets, and frequently all abortive, except the upper ones.

Flesly receptacle wanting.
Scc. III. DACRICARPUS, the Daeridium-fruited Podocarpus.
Leares ninny-formed, and cither three-sided or needleshaped, aud in five rows, or spreading, linear, and flat.

Flovers solitary and terminal.
F'ruit pendent, almost dupraceous ; receptacle fleshy, with the axis of tho short spike without bracts.
Gen. NAGELA, Gurtner. Leares opposite or altermate, and many-nerved.

Flowers monocious or dimcions.
Fruit axillary, drupaceous, and quite round, with a fleshy receptacle, counceted with the braets by the axis of the short spiko.

Secds covered with a hard thin bony shell.

## Tribe III. DaCRYDIE, the Dacrydium Tribe.

Gen. DA(RYDIUMI, Soltander: Leteres needle-shaped or sealeformel, opposite, and imbricated or spreading.

Flucecrs, male aul female on separate plants.
Fruit drupaceous and erect, with a slort fleshy disklike exterior, and bony shell on the sced.
Gen. AllCROCACIIliys', J. Ifonlier. Leaves very small, ovato or seale-formed, and elosely imbricated in four rows.

Flowers, male and fcmale on separato plants, and ternimal.

Fruit very small, nearly globular, terminal, bright red, and composed of mumerous small, viscit, fleshy scales.

Seeds egroshapect, solitary at the base of the scales, more or less exposed, and covered with thin bony shells.
(ien. P'MERUSPILERA, Areher. Seabs scali-furmed, ovaterhombois, ohtuse, convexly kee hed on the back, ciliaterl on the margins, and clusely imbricated in four rows.

F'louers difecious, or male and female on sparate plants; the female nues recurved, solitary, globular, and terminal.

Fruit exrer-slaperl, erect, and somewhat fleshy.
Siales loosely imbricated, mather fleshy, and bontshapect.

Steds oval-obloug, solitary, aud covered with a bony shell.

Gen。 LEPDDOTHAMLUES, Priliphi. DAares minute, scaleformen, convex or keded on the back, thickened at. the peints, and regularly imbricated.

Flnuers diencious or moncecints, malo eatkins small, eghroshuped, and teminal.

Frmit solitary and teminal, with few seales, the lowno ones the smallest and the fertile ours.

Simls solitary, pitcher-shaperd, maked at the top, and girded at the base by a cup.

## Tribe IV. SAXE-GOTHEA, the SAxE-Gotira Tbibe.

Fruit composed of several consolitiated frec scales formed into a Heshy cunc.

Gen. SAXEGOTII.TA, Linilley. Lentes alternate, somewhat two-rowed, flat, and leathery.

Flowers, male abel female separate, but on the same plant.

Fruit composed of several cousolidated free scales formed into a flesliy cone.

Secds, a pale browu glossy oval mut, with a short, thin, jagged membrane enveloping the base of the seed.

## THE PINETUM.

## Gen. ABIES.* Don. The Spruce Firs.

Floucers, moncecious, or male and female on the same plant, but separate ; the male catkins axillary or terminal, the fermale ones terminal and solitary.
Cones, pendent, solitary, terminal, and remaining on for a long time.
Seales, persistent, leathery, thin, broadly rounded, and sometimes undulnted on the edges.
Seeds, oblong, pointed with a short, stiff deciduous wing, and bony shell.
Bractects, small and hidden by the seales, or long and trident, like the Douglas Fir.
Secc-leaves, from 7 to 9 in number.
Leares, solitary, four-sided, acute-pointed, and seattered all round the shoots, or flat and moro or less two-rowed, like the Hemlock Spruce.

[^1]"There towering firs in conic forms arise, And with a pointed spear divide the skies."

All evergreen trees, found in the colder parts of Europe, Asia, and Ameriea.

The ancients called the Silver Fir"Abies," and the Spruce Fir "Picea;" but by some inadvertence Linnceus reversed the names, and thus created great confusion in their nomenclature. The English and American writers still follow Linnæus, and apply the name Abies to the Spruces, and Picece to the Silver Firs: while nearly all the French, German, and other continental authors follow Buulin and $D u$ Roi, and reverse the terms ; applying Picea to the Spruces, and Abics to the Silver Firs. Pliny called Abies excelsa "Picea," and distinguished it from the Silver Fir, as the "tonsili facilitate," on account of its fitness to be shorn, or elipped into hedges; and Professor Link observes tbat the true Spruces (Abies) approach nearest to that of Pinus ; and that upon close inspection still more so than at a first glanee. He says, "For instance, if the leaves that stand singly are examined minutely, it will be seen that several of them have their surface grown together, and consequently they are in tufts, like the leaves of the true Pines; and as a proof that this is the ease, it will be found that there is no upper surfice on the leaves of the Spruces, but that the leaves present only the under-surface on both sides; as will be seen on eomparing them with the leaves of the true pincs. The seam where the leaves are joined may be distinetly seen, for it forms a line in relief on both sides of the leaves of the common Spruce, which is never the case when such line is formed by the mid-rib, because it is then either on the upper or under side. Some spruces have two leaves grown together, others four; the sheaths at the base of the leaves are not observable, but appear to have grown together in the footstalk." In addition, Professor Link points out the following differences between the leaves of the true Spruees (Abies) and Silver Firs (Pieca). The leaves of the Silver Firs, he says, "do not grow together; but are single, and have the usual form of single leaves, the mid-rib being only visible on the under side; the upper one, having a furrow down the eentre of the leaf, is flat,
divided at the point, and dark green, with two white stripes on the ander side, one on eaels side of the mid-rib, and arranged in two or more rows along the shoots in a more or less lateral position."

Section I. VERA, on the trite Spruces, With foursided, needle-siliped leates scattered all hound the Shoots.

No. 1. Abies alba, Michoux, the White Spruce Fir.
Syn. Abies curvifolia, Booth. glauca, Mauch.
Picea alba, Linto. Pinus laxa, Eherhart. ghauea, Mench. tetragona, Manch. alba, Aiton.
Leaves solitary, incurved, sharp-pointed, ghacous, four-sided, and seattered round the branches; three-quarters of an inels long, and not very thickly set on the branches. Branches compact and rather dense. Cones oblong-cylindrical ; 2 or $2 \frac{1}{2}$ inches long and rather more than half an inch broad; slightly tapering to the point, pendulous, and not very firm. Scales thin, smooth, and broadly rounded on the upper part; half an inch wide, but much smaller towards the apex or top, regularly overlapping each other, and with entire margins.

A tree with horizontal branches, growing to a height of 50 feet, and seldom more than 1 ? feet in diameter, forming a regular pyamil, with very light-coluured bark, and quite a silvery appearance on account of the whiteness of its foliage. Wood inferior to that of any other spruce in quality; but very useful for sheathing the bottom of ressels in lieu of metal, in order to protect the planking from the ravages of the tevelo, or salt water worm.

It is a native of Canada, New Brunswick, Maine, and C'arolinal and even extendy to neur the Aretic Sin; for, aecording
to Dr. Richardson, it is the most northerly tree that came under his observation on the Coppermine River, within 20 miles of the Aretic Sea, growing there 20 feet high. There are the following varietics:

Abies alba clauca, Plumbly, Mr. Dimsdale's Silver Spruce. Syn. Abies alba argentea, Hort.
This very distinct and striking variety has white silvery leaves, and attains to about the sane size as the common White Spruce. It was first brought into notice by Mr. Plumbly, in the excellent collection of Conifcrs belonging to Charles Dinisdale, Esq., at Esscnden, near Hatficld, in Hertfordshire.

Abies alba nafa, Loudon, the Dwarf White Spruce.
Syn. Picea alba nana, Link.
" Abies alba prostrata, Hort.
A dwarf bush, seldom growing more than 3 or 4 feet high, but very dense, aud with a very neat appearance.

Abies Alba minisa, Knight, the Hedgehog-formed White Spruce.

> Syn. Abics alba echinoformis, Hort.
> " Picca alba echinoformis, Carriere.

A very diminutive little bush, in general outline very much rescmbling a hedgchog: thickly clothed with spreading glaucous leaves.

It is the least of all the Spruces, and a singular object of what a timber-tree may become.

No. 2. Abies Afcockiania, Veitch, the Alcock Spruce.
Syn. Pinus Alcockiana, Parlatore.
" " bicolor, Maximowicz.
Picca Alcockiana, Cervière.
Leaves solitary, six lines long aud half a line bead, curred rigid, tetragone, mucronate, and crowded on all sides of the
shoots. They are deep green above, somewhat coneare, and streaked with glaueous bands below, and on twisted footstalks placed on diamond-shaped cushions along the shoots. Cones solitary or subaggregrate, oblong-eylindrieal, obtuse at the ends, two inches long and forr in circumference. Seates eartilaginous, lonse, obtuse-rhomboid, and denticulated on the upper margins. Seeds two lines long, cimmmon-coloured, and with obovate wings four lines long.

A large tree, from 90 to 100 feet highl, found on the saered mountain, Fusi-Yama, in the province of Surunja, on the island of Nippon, in Jiplan, at an elevation of from 6000 to T000 feet, where it forms a noble tree, with very small leaves, glaucous, on the under side.

It was first introduced by Messrs. Veitch and Sons, in 1861, and named in compliment to Sir Rutherford Alcock, the British minister at the Court of Yeddo, in Japan.

> No. 3. Abirs comiutata, Purletore, Encelmann's Spruce. Syn. Abies Engehmanii, Perry.
> nigra, Engrlmann, not Michaux.
> Picea Engelmannii, Engelmann.

Leaves thickly erowded all round the branchlets, threefourths of an ineh long, four-sided, rigid, smonth, slarp-pointed, and cither straight or slightly curved, particularly when young, and of glaucous white colour: Cones solitary, and cither horizontal or somewhat deelining, nvate, or oblong-cylindrieal, obtuse at the ends, and from 2 to 213 inches long, and 1 inch broad. Seales rather loosely imbricated, somewhat cartilaginous, ovate-rhomboid, subtruneate or emarginate, and with thin crenate or crose margins. Seeds small, oval, and of a brown colour, with short oborate wings.

A pyramidal true, from so to 100 feet high, with the branches in whorls, the lower ones being horizontal, the upper ones more or less ascending, and the branchlets prominently tuberculater when old.

Dr. Parry found it composing almost the entire forest growth
of the mountain slopes of the Middle Park above the head of Grand River. A magnifieent tree, 100 feet high, with an even columner trunk, from 2 to $2 \frac{1}{2}$ feet in diameter at the base, but tapering upwards, and covered witl a thin, smooth, scaly bark of a purplish colour. It is also found abundantly on the head waters of the Kettle, Colorado, Missouri, and Columbia rivers; and, according to Dr. Fendler, it extends down to Santa Fé, in New Mexieo.

No. 4. Abies excelsa, D. C., the Common Norway Spruce. Syn. Abics Picea, Miller.


Leaves seattered, solitary, four-sided, deep sombre green, curved, stiff, sharp-pointed, and more crowded together laterally than on the upper and under sides, and nearly 1 inch in length. Branches on young trees nearly horizontal and disposed in regular whorls from the base to the summit; but in old trees the bottom branches drop off, and the others become rather pendnlous. Cones produced on the points of the upper branches, and when full grown become pendent; from 5 to 7 inches long, and $i_{2}^{1}$ to 2 inches in breadth. Scales irregularly, four-sided, or rounded, slightly incurved and rugged, or toothed at the top. Seeds very small, with a wing threc-quarters of an inch long. Seed-leaves from 7 to 9 in number.

A fine lofty tree, attaining to the height of 150 feet, or even more in a favourable situation, with a straight trunk, from 2
to $\check{5}$ feet in diameter, and widely extended branehes, spreading regularly on all sides, so as to form a pyranid; timber light, clastic, and not very resinous. It is known under the name of White Deal.

The Spruce Fir is rery common, and forms forests on the Alps, from east to west, and is prineipally found at a height varying from 4000 to ( 6.500 feet of elevation, but it sometimes oceurs as high as 7000 feet, where it beeomes very dwarf; while, on the other hand, it has been found as low as 1000 feet at Tolmezzo in Venice, but nowhere on the whole chain of the Apennines. It is also wanting in a matural state in the countries surrounding the Mediterranean, even on the mountains; but is common in Scandinavia, especially to the east of the mountains; and in the German plains, also from the Vosges in France, to the Carpathians, and on the Pyrenees. It is very common, planted and otherwise, in Norway, Sweden, Lapland, Demmark, the north of Cermany, and Russia; and, as invariably happens with a species sulject to such $\Omega$ variety of climates and soils, it has many varieties or forms, of which the following are the most striking:-

Abies rixcelsa pygmai, Loudon, the Dwarf Spruce.
Syn. Abies nana, Hort.
pumila, Ilort.
minuta, IIort.
minima, Hort.
A very diminutive variety, only growing a foot high, but spreading on the ground, and certainly one of the dwarfest of all firs.

Abies excelsa Clanbrasilina, Loudon. Lord Clanbrasil's Dwarf Spruce.
Syn. Abies Clanbrasiliana, Louclon.
A low, compaet, round bush, from 3 to 4 feet high, with the leaves less than half an inch in length, found in Ireland.

Abies excelsa brevifolia, Cripps. The Short-leaved Miniature Spruce.
A distinct pigmy Spruce, with very minute leaves.

Abies excelsa denudata, Hort., the Naked or Twig-branched Common Spruee.
Syn. Abies excelsa virgata, Jucques.
, Picer excelsa denudata, C'arrière.
This variety differs principally from the monstrous form of the Common Spruce, in the lesser brauches being more twiggy, spreading, reflected, and a little more divided at irregular distances, and in the leaves being stouter, and lying more closely along the branchlets. It is of French origin.

Abies excelsa elegans, Loudon, the Elegant Common Spruce.
Syn. Abies elegans, Smith.
" " excelsa dumosa, Hort.
A dwarf variety, with very slender gray foliage, only growing 4 or 5 feet high, with a very compact pretty appearance.

Abies excelsa eremita, Knight, the Solitary Red-branched Common Spruce.
Syn. Abies miniata, Knight.
," Picea excelsa eremita, Carrière.
A variety with short stout branches, covered with a yellowish red bark, and mostly solitary, or free from laterals; the leaves are short, irregularly four-sided, somewhat two-rowed, from being reverted or bent backwards, and mostly blunt-pointed.

It nearly approaches Abies cxcelsa monstrosa, but is much less branching, and with the bark generally of a much redder colour.

# Abies excelsa Finedonensis, Paul, the Finedon Hall Spruce. 

## Syn. Abies Finedonensis, Hort.

A striking variety of the Common Spruce, with all the younger leaves on the upper side of the shoots at first of a pale yellow, or straw colour, as well as the young wood; lout afterwards, as they get older, they change to a hronzy brown, and finally, when fully matured, hecome light freen; whine thome leaves on the under side of the shoots and fully shaded branchlets ave more or lese green from the first.

This variety originated at Tinedun Hall, in Northamptonshire, where it came up aceidentally in a bed of seedlinge Cummon Spruces.

Abies exctis.a Greguryana, Punl, Mr: Gregory's Dwarf Spruce.
Syn. Abies Grugoryana, Lozr:
". . Gregoryi, Mort.
A very dwarf varicty; seldom growing more than 1 or 2 feet high, but with numerous small spreading aml somewhat declining hranchlets, thickly eovered with shori, stiff, needleshaped leaver, placed obliquely all round the shoots, and of the same colour in all parts.

It was raised at the Cireneester Nursery, in Ciloucestershire. Abies excelsa inverta, Smith, the Inverted-branehed Commou Spruce.
Syn. Abies inverta, Smith.

A pendulous variety of the Common Spruce, in which the leading shoot straightens itself in the old wood, after the mamer of the Deodar Cedar, but not so quiekly; the lateral hranches on old plants are as drooping as the weeping willow; and the leaves are longer, larger, and of a brighter green than those of the Common Spruee, of whieh it is only an accirlental variety, obtained by Mr. Richard Smith, of the St. John's Nursery; Woreester.

This kind appears, according to the drawing of the original
tree, distributed by Mr. Sinith, to be superior in its more drooping liabit to all the other forms of the Pendulous Spruce, of which there are several variations.

Abies excelsa moxstrosh, Loullon. Syn. Abies excelsa Cranstoni, IIoirt. " " " horizontales, IIort.
A very singular variety, with the binuches and branchlets thickened and mostly without laterals, and straggling in all directions.

> Abies excelesa mucronata, Loudon. Syn. Abies mucronata, Rauch.

A dwarf-growing variety, with short, thick, dark green sharp-pointed leaves, and distorted, irregular branches, rather crowded. It is of French origin, and very distinet.

Abies excelsa nigra, Loudoin. Syn. Abies Lemoniana, Booth.
" ", gigantea, Smith. " ", execlsa giganter, Hort.
This only differs from the Common Spruce, in having the leaves of an intense dark green, and stouter, and in the eones being very much longer and broader.

Abies excelsa pendula, Loudon.
Syn. Abies communis pendula, Booth.
" ", viminalis, Alstrœmer.
This only differs from the species in having all its branches and branchlets drooping, and the leaves rather longer.
Abies excelsa pyramidalis, Hort., the Pyramidal Common Spruco.
Syn. Abies pyramidalis, Hort.
" Picea excelsa pyramidalis, Currière.
This varicty differs from the Common Spruce, in having its branches aseending, and frequently as much collected together as those of the Lombardy Puplar:

A striking kind, on account of its compact pyramidal form; of French origin.

Abies excelsil stricta, Loulon, the Dwarf Conical Common Spruce.

> Syn. Abies excelsa conica, Ketelcer. Picea excelsa conica, Cumière. Pinus Picea conica, Emullichor:

A very neat dwarf variety, quite conical in shape, and not more than 3 or 4 feet in height, with the branches and branchlets erect and numerous. Leaves slender, very closely compressed, bright green, marked along the sides with glaueous lines, and seldom more than half an inch in length, and terminating in a slender point. It is a very nice, compact variety.

Abies exceisa tenuifolia, Ioudon, the Slender Spruce.
Syn. Abies excelsa attemata, Hort.
" ". gracilis microphylla, IIort.
". ., microphylla, Jlort.
This variety differs in having very thin slender leaves, and attenuated branehes, with few branchlets.

Abies exchlsa variegata, Loulon. Syn. Abies excelsa foliis variegntal, Loudon.
This differs in having some of its leaves, and occasionally some of the lesser branchlets, pale yellow, or whitish in colour, intermixed with the ordinary green foliage of the plant. Abies excelsa aurea, recently introduced by Messrs. J. and C. Lee, is probably a richer variety of the above.

> Nio. 5. Abies Jessoevsis, Sillohl, the Jesso Fir.
> Syn. Alries microsperma, Limelley.
> , Pinus Jessoensis, Antoine.
> " Picea microaperma, C'airière.
> " „Jessomensis, C'urvirre.
> Leaves, sub-tetragronal or needle-shaped, linear-lanceolate,
narrow, straight, spreading, quite entire, and terminated by an aeute, spiny, bristle-formed point ; they are more or less arranged on the mpper side of the branehlets, bright green above, glancous below, and from three-fourtlis to an inch long, and threequarters of a line hroad. Branches in horizontal spreading whorls, with the brauchlets, when young, cylindrical, straight, smootl, and of a yellowish-brown eolour; but when old, rough and tuberculated ly the convex cushions of the fallen leaves. Cones, solitary, cylindrical, two and a quarter inehes long and three-quarters of an inch in diameter, and as broad at one end as the other. Scales numerous, loosely inbrieated, smooth, membranous, oblong-elliptic, toothed at the apex, and irregularly crenated on the margins. Bracteas very small, ovate, and terminating in a spiny mucro. Seeds very small, pale einnamon-coloured, one line long, with ovate wings two lines long; sometimes aeutely notelied on the margins.

A tree resembling Alies Menriesii, and from 40 to 60 fect lighl, with a straight stom covered with an ashy-gray luark, and the branches in ilhorizontal whorls, sometimes inelining downwards at the points.

It is found plentifully in the vieinity of Hakodadi and Matsmai, in the island of Jesso ; and at Youkalama, near Kanagawa ; and to the south of Yeddo, on the island of Nippon in Japan, where the natives eall it Jevo-Mcatsu.

No. 6. Abies Mexziesit, Loudon. Menzies Spruce Fir.
Syu. Piuus Menzicsii, Douglas.
" " Sitchensis, Bongard.
, Picea Menzicsii, Cumirìe.
Sitehensis, Currière.
" Abies Sitehensis, Lindley.
Leaves solitary, thiekly scattered in every direction round the branches, twisted at the base, narrow, rigid, linear, sharppointed, ineurved, silvery below, and vivid green above, threc-
quarter: of an iuch long, and soon falling off after the first season, leaving the branches very naked, warted, and with a jointed appearance. Buds ovate-pointed and covered with resin. Cones 3 inches long and 1 to $1 \frac{1}{4}$ inch broad, pendulous, cylindrieal, blunt-pointed, and with the seales loose, and not compact. Scales elliptieal, threc-quarters of an inch long, and having a shrivelled, brown appearance, with the margin thin, very irregularly toother or bitten. Bracteiss small, and hidden by the scales. Sceds rery small and winged.

A tall tree, growing 60 or 70 feet high, with a pyramidal, thickly-branched head, and silvery appearance. Timber of excellent quality.

It is found abundantly in Northern California, and on the island of Sitcha, also growing in the shasta country, in rather moist situations along the banks of rivers, in deep alluvial soil 100 fect high.

## Ables Mengiesir crisp. A Autoinc.

This varicty only differs from the species, in having the margins of the scales, on the cones, more mindulatel or somewhat jagged, and more extended.

No. 7. Abies nigra, Michenx, the Black Spruce Fir.
Syn. Ahies Mariana, Millci:
" " denticulata, Poircl.
" Picea nigqa, Iink:
" Pinus nigra, Aiton.
" " Mariana, Du Roi.
" " Marylandica, Booth.

Leaves solitary, regularly spreading all round the branches, and somewhat four-sided, very short and stiff, of a sombre dark grecn, half an inch long, thickly set and creet. Branches horizoutal, or very slightly drooping at the ends. Cones pendulous, egrg-shnped from $1 \frac{1}{2}$ to 13 inch long, and nearly three-quarters of an inch broad, deep purple when young, but when ripe of a
dusky reddish brown. Scales very thin, rounded blunt, and when ripe undulated or wavy and jagged on the margin. Seeds small, with little stiff wings.

A tall tree, with a rough brown or llackish bark, attaining a height of from 70 to 100 fect, and $2 \frac{1}{2}$ feet in diancter, with horizontal branches, and a remarkably straight stem, diminishing regularly from the base to the top. Timber light, clastic, strong, and of a clear ycllowish-white colour.

It is found in the coldest regions of North America, but is most abundant in Lower Canada, Newfoundland, New Brunswick, Nova Scotia, in the district of Maine, Vcrmont, and the upper parts of New Hampshire, in Pemnsylvania, on the Black Mountains in South Carolina, and in California. It is the Double Spruce of the Cinadians, and the Gum Spruce of the Ameriean lumberers, and the tree from which they make spruce beer. It has the following variety :-

Ables nigra pumula, lizight. Syn. Abics nigra fastigiata, llort.

Picea nigra fastigiata, Carrière.
A dwarf variety, growing 3 or 4 feet high, and rather slender, with smaller foliage and a more compact habit.

No. 8. Abies obovata, Loudon, the Obovate-coned Siberian Spruce.
Syn. Pinus Abies, Pallas.

> "obovata, Antuine.
> Picea obovata, Leclebour".

Leaves partially four-sided, more or less curved or straight, closely placed all round the shoots, very slender, stiff, and sharp-pointed; they are bright green on the upper side, pale beneath, and from half to three-fourths of an incli long. Branches numerous, horizontal, and in regular whorls; branehlets mostly opposite, but not unfrequently growing on the upper side of the branch; they are slender, straight, stiff, spreading, lense, and nearly horizontal. Buds small, numerous,
bhmitly egrg-shaped, dark brown, and mostly produced near the points of the shoots. Cones, solitary, subsessile, erect, oblongcylindrical, obtnse at the apex, $2 \frac{1}{2}$ inches long and $1 \frac{1}{4}$ wide. Seales wedge-shaped at the base, rounded on the upper margin, ruite entire on the edges, smooth on the bark, coneave beneath, loosely inbricated, and nearly three-fourths of an inch long.

A tall tree, resembling the Common Spruce, and in favourable situations growing 100 feet high, hut diminishing in stature and foliage according to sitnation, soil, and clevation, and, like all other coniferous trees from Northem regions, subject to great variation in appearance.

It is found on the Altai mometams and in Siberia, at clevations of from 4000 to $5(100)$ feet.

It is called "Kira-Schersae" by the Tartars on account of its warted branches and elose appearance, and is a very different kind from the Abies Orimitalis, which so frequently is substituted for it in the murseries. It more rescmbles the Common Spruce, hut with very mueh smaller egre-shaped cones, which are quite obtuse at the ends, and seldom more than 23 inches long, by If wide.

> No. 9. Abies omestalis, Puiret, the Eastem Spruce. Syn. Pinus orientalis, Limerus. Picea orientalis, Livk. Wittmanniana, Fischer: Abies Wittmanmiana, Hertuces.

Leaves solitary, rery dense, partially four-sided, coveriug the branches on all sides, deep green on both sides, narrow, but not sharp-pointecl, half an inch long, and rather stout. Branches straight, slender, and with the leares all one length alung the branchlets. Cones pendulous when full grown, eylindrical, tapering remularly from near the base to the point, which is quite small, $2 \frac{1}{2}$ to 3 incles long, and three-quarters of an inch broad at the widest pait, which is towards the base. Scales rounded, thin, loosely imbricated, bromd near the base but with
the upper ones more wedge-shaped, some what pointed, narrower, and slightly uneven on the margins. Bracteas shorter than the scales, and enclosed. Seeds very sinall, and nearly black, with a short but rather broad wing.

A lofty tree, with a straight stem, closely covered with rather stiff branches, growing 70 or 80 fcet liigh, and $1 \frac{1}{2}$ foot in diameter, forming a conical-shaped head. Timber excellent and tough.

A native of the coast of the Black Sea, on the loftiest mountains of Imeretia, in Upper Mingrelia and the neighbourhood of Teflis, forming whole forests between Guriel and the Adshar mountains.

It is quite hardy.
No. 10. Abies polita, Siebold, the Tiger's-tail Spruce. Syn. Abies Torano, Siebold.
" " 'Thunbergii, Lambert.
" Pinus Abies, Thunberg.
" " polita, Antoine.
", Picca polita, Currière.
Leaves thickly arranged all round the branchlets, straight or slightly curved, stiff, somerwhat four-sided by the prominent mid-ribs on both faces, glabrous, entire, acute or somewhat spiny pointed, and of a glossy green, marked on the under side witl several ranges of glaucous stomates, and from threc-fourths to an inch long, and three-fourths of a line broad. Cones, ovate or ovate-oblong, rounded at both ends, quite smooth, and from 3 to 4 inches long and 2 inches broad in the widest part; they are solitary and pendulous at the ends of the slender branchlets, and, when young, of a bright green colour, but when fully matured, of a fine dccp, chestnut brown. Scales, numerous, persistent, closely imbricated, leathery in texture, with those nearest the base and apex of the cone the smallest; they are obovate, rounded on the upper part, wedgeshaped at the base, entire on the edges, three-fourths of an inch long and the same in breadth, and of a fine chestnut brown.

The seeds are small and nearly black, with thin transparent oblong wings.

A fine graceful tree, rembling Abies Smithiana, from $S 0$ to 100 feet high, with horizontal branches and pendulous branchlets.

It is found on the mountains of Dewa and Matsu, in the northern part of the island of Nippon, in Japan, and constitutes a great part of the woods that are planted about the temples near Youkahama.

The Chinese name for this Fir is "Jo-bi-sjo" (common or mative Fir), and the Japanese "Torano-wo-momi" (the Tiger'stail Fir), on account of the loug pendulous branches on old trees resembling the tail of a tiger ; they also eall it "Siromomi" (White Fir), in allusion to its timber being lightcoloured or almost white.

No. 11. Abies reuba, Poitel. The Red or Aretic Spruce Fir:


Leaves solitary, very slemder, awl-shaped, rigid, sharpprinted, thickly and regularly seatiered all round the liauches, somewhat four-sided, half an inch long, and of a ghatucous pale green coluur. Branches horizontal and slender. Cones oblong, egro-shaped, tapering regularly to both ends, pendulous, about one inch long, and half an inch broad, and of a reddish-brown colour: Scales round, somewhat lobed or divided in the centre of the upper margin, and entire; the middle scales the largest, those near the apex the smallest, and more wedge-shaped. Seeds very small, with short still wings.

A tall trec, varying in stature according to soil and situation.

In deep loamy soil, and in a favourable situation, it grows 70 or 80 feet high, while in the cold Aretic regions it becomes a small bush.

It is found in Nova Scotia, Newfoundland, and the more northern parts of North America, as far as the Aretic regions, where it forms tho last vestige of arboreseent vegetation. Timber, execllent. There is the following variety :-

Abies rubra ceerulea, Loudon.

$$
\begin{aligned}
& \text { Syn. Abies cœerulia, Loddiges. } \\
& \text { " } \quad \text { rubra violacea, Loudon. } \\
& \text { " Pinus rubra violacea, Endlicher. } \\
& \text { " Picea cœrulea, Link. }
\end{aligned}
$$

This is a slenderer and dwarfer variety, growing only six or eight feet high, with bluish-gray foliage, and violet-coloured cones.

No. 12. Ables Schrenklaid, Lindley. Sehrenk's Spruce Fir. Syn. Pinus Sehrenkiana, Antoinc.
" obovatia Schrenkiana, Purletore.
" orientalis longifolia, Ledebour.
Picea Sehrenkiani, Fischer.
Ajinensis, Fischer:
Abies Ajancusis, Lindley.
Leaves four-sided, quite straight, linear, rigid, very acute, and with pale spiny points; they are bright green, distinctly marked benenth with dotted glaueous lines, and from threefourths to an inch long, and not very thiekly placed round the shoots on raised cushions. Branches subvertieillate or irregularly placed allong the stem, spreading, and covered with a light yellowish-brown bark. Branchlets rather slender, mostly alternate, not very numerous, and either spreading horizontally or slightly decliniug, and furnished with prominent oval buds, placed at irregular distances, and when young lave the appearance of being almost transparent. Cones solitary, straight, cylindrical, loosely imbricated, from two and a half to three
inehes long, and nearly one inch in diameter. Scales numerous, obovate, wedge-shaped at the base, rounded or slightly truncate at the aper, smooth on the back, and entire on the edges. Seeds rather small and blackish, with pale yellowish oblong wings.

A tall tree, resembling Alies Menziesii, and in favoumble situations growing 80 feet high, but diminishing in stature according to situntion, soil, and elevation.

It is found on the Altai Mountains, in Dahuria, Songaria, Kantselatka, and along the Amoor in Eastern Siberia.

No. 13. Abies Smithiana, Loudon, the Indian Spruce Fir.

|  | 1 bies | Khutrow, Louclon. |
| :---: | :---: | :---: |
|  |  | Morinda, Mort. |
|  |  | -pimulosa, Cirifith. |
|  |  | pendula, Criefith. |
|  | Picea | Morinda, Linli. |
|  |  | Khutrow, Curière. |
|  | Pinus | Khutruw, lioyle. |
|  |  | Morinda, Must. |
|  |  | Smithiana, Lumbe |

Leaves singly at nearly chual distances around the shoots, mostly four-sided, somewhat curved, from one and a half to two inches long, scaltered, and with excessive sharp points. Brauches spread out horizontal, thox nearest the bottoni somewhat bent downwards; lateral ones very numerous, slender, and drooping. Cones pendulous, when fully matured, from four to six inches longs, and two inehes brond, ovate-oblong, or nearly cylindrical, with rery even, brown, obovate, rounded scales, covered with a glaucous bloom when young; the young cones are at first bright green and upright, but from their own weight and the slenderness of the bramehes, and being terminal, soon become penctulous. Seeds very small and nearly black; wings rather sinall.

A marmificent tree, found on the lofy mountains of the interior, firm Bhotan up to Katiristan, at elevations of from B 2

7000 to 12,000 feet, and is not unly a very superb, but very graceful tree; the boughs aseend a little in the young trees, but are horizontal in the older ones, and from these the branchlets and smaller twigs droop in the most graceful manner. It prefers a nortl aspeet, and attains a great height in favourable situations, frequently from 100 to 150 feet high. Capt. Hodgson measured a fallen tree in 1830, and found the length 169 feet.

This Fir is very common above the Deodar forests, on the mountains of Cashmere, and stretches as far as Gilgit, its most northern labitat as yet ascertained; Dr. Griffith found it as far to the eastward as Bhotan, at elerations varying from 7500 to 10,500 feet, a large and handsome tree. In the Himalayas it is the most graeeful Fir met with, on aecount of its long drooping brauchlets and great dimensions, which sometimes measure from 18 to 20 feet in girth, four feet from the earth's surface, and towers 150 fect or more into the henvens ; but its wood is soft, open grained, and said, when converted into boats, not to last more than five or six years.

In the Himalayas this Fir is called "Morinda" (Neetar, or honey of flowers), on aceount of the resinous drops or tears found on the young cones and other parts of the tree, resembling honey. The mountainecrs about Simla eall it "Rai," "Re," "Rhai," and "Ray-ung ;" and the people of Gurhwal, "Realla," "Rleci," and "Rayha," all variations in their dialects for Fir-tree, Prickly Fir, and Woorl Pine. It is also called by the same people, "Roo," "Roo-ce," and "Row;" all signifying to weep or shed tears ; cither on aceount of its resinous drops, or the drooping appearance of the full-growin trees. Dr. Royle's barbarous local name, "Khutrow," should either be "Koodrow " (wecping fir), or "Koodrai" (prickly fir), its true vernacular names about Simla, and of which Dr. Griffith's temporary botanieal one, spinuloce, is a translatiou. In the Simla jurisdiction it is styled "Row," and "Rai," and in the Kohistan of the Punjab, and in Kooloo, "Koodrow;" but in Kamaon and Gurhwal, "Morinda," and "Koodrai," are its more common appellations.

The Timber is extremely soft, of a white colour, and generally free from knots, but very perishable.

Section II. TSUGA, or those kinds with flat leayes, mostly Glaucous below, and more or less two-rowel), LIKE THE HEMLOCK SPRECE.

> No. 14. Abres Bruvoniani, Lindley, the Indian Hemlock Spruce.
> Syin. Alies dumosa, Loudon.
> " " decidua, Hallich. cedroiles, Gribjeth. Pimus dumosa, Lambert. decidua, Wrallich. Brunoniana, E'ndlicher. T'suga Brunoniana, C'arriere. Picea Brunoniana, Sprech.

Leaves solitary, somewhat in two rows, or scattered along the branches, flat, linear, spreading, obtuse or slightly pointed, minutely touthed towards the apex, reflexed on the margins, and about one inch long, covered below with a milk-white mealiuess, and of a bright glossy green above, very easily detached by wind or pressure, and almost deciduous in winter. Branches numerous, slender, and pendent. Cones terminal, an inch long, solitary, without foot-sitalks, bluntly owal, pale brown, and furnished at the base with several small oval, opposite, blunt seales. Seales persistent, loosely imhrieated, rounded, and smouth on the margins. Seeds surall, a little compressed, and anernlar; wings obtuse, and shorter than the scales.

A fine tree, growing from 70 to 80 feet high, with spreading branches anl pendulous brittle branchlets, found in Bhotan proper, occurring from 6500 to 9500 feet of elevation; a large, solitary tree. Dr. Giriflith measured one specimen 27 feet in girth, at a height of five feet from the ground. Dr. Hooker found it in Sikkim, forming a narrow belt at an elevation of from 9000 to 10,000 feet, on the south tlank of Kunchinjinga,
probally the loftiest peak in the world; but in the imermost valleys the limits are from 8500 to 10,500 feet of elevation. In Nepal it is called "Changathasi-Dhoop," a name implying that it is employed for incense.

The Gorkhalees, in Nepal, call this tree "Thingia" (Yew), or "Thingoori-Sulli" (fragrant Yew), and the Bhotiyas, "Semadoong," which has a similar meaning; but, according to Professor Don, it is better known under the name of "SillooHaterhee " (fragrant Fir), and found plentiful on the mountains of Cosainthan, in Nepal, where its bark is much used for the covering of sheds and out-houses.

It is by far the handsomest of all the Indian Firs in a native state; but its timber is of a very inferior quality, and soon perishes if fully exposed to the weather.

It is hardy, but suffers greatly fiom the late spring frosts.
No. 1u. Abres Canadensis, Michuux, the Hemlock Spruce.
Syn. Pinus Cinadensis, Willd.
" $\quad$ Americana, Du Roi.
" Abies Americana, Marsh.
" Picea Canadensis, Link:
" Tsuga Canadensis, Curvière.

Leaves solitary, Hat, and irregularly disposed in two rows, from half to three-quarters of in inch long, downy when young, rough at the margins, blunt-pointed, bright, vivid, light green on the upper surface, and with two silvery stripes underneath on each side of the mid rib. Branches numerous, slender and downy when young, spreading, and rather flat. Cones pendulous on the extremities of the branches, from five-cighths to seven-eighths of an inch long, and three-eighths of an inch broad, of an oval shape, green when young, but brown when ripe. Scales roundish, smootl, entire on the margins, and few in number. Sceds small, light brown, with wings a quarter of an inch long, and nearly white. Bark smooth and lightcoloured.

A busly-headed tree, growing in its native country from 60
to so feet high, with a straight stem, of a uniform size, for two-thirds of its height.

The wood is less valuable than any of the other resinous trees in North America, but the bark is inestimable for the purposes of the tamer, and spruce beer is mate from tho branches.

It is found in the most northern regions of Camada, and on the highest mountains, as fir as South Carolina. Michaux says it berins to appear abont Indson's Bay, the Lake of St. John, and in the neighbourhood of Quebee, and that it fills the forests in Nova Scotia, New Brunswick, Maine, Vermont, and the upper part of New Hampliire, in company with the Black Spruce, where it constitutes three-fourths of the evergreen wools. There are the following varieties, viz, :-

## Abifs Chanexis NaNa, Lauson.

Syn. Tsuga Canadensis nana, Currière.
A dwarf varicty, not growing more than two or three feet high, and spreading on the ground with a more tufty foliage.

## Abies Canadensis gracilis, Waterer, the Slender Hemlock Spruce.

Syn. Abies Canadensis microphylla, Hort.
This is a very singular-looking variety of the Hemlock Spruce, on account of its slender shoot-, thin appearance, and small foliage. The leaves are linear, blunt-pointed, glossy above and glaucons below; more or less obliquely placed all round the shoots, and soldom more than three lines long. Branches and branchlets very slender, little divided, more or less drooping at the ends, and rather thickly covered with the small, obliquely-placed leaves.

A very distinct and singular-looking variety, raised in the Nursery of Dessrs. Waterer and Codfrey, at Knaphill, in Surrey.

> No. 16. Abies Douglasit, Lindley, the Douglas Fir. Syn. Abies Californica, Don. Picea Douglasii, Link: Pinus Douglasii, Subine. taxifolia, Lambert. Tsuga Douglasii, C'ervière. Abies mucronata, Rufinesque. " obliquata, Rufinesque.

Leaves solitary, flat, entire, narrow, linear, spreading and irregularly two-rowed; from one inch to one and a half long, bluntly pointed, bright green above and slightly glaucous, and mueli paler below. Branches numerous, irregularly placed along the trunk, spreading horizontal, sometimes a little ascending, very twiggy, and nearly that; branchlets long, slender, mostly in two rows, and more or less declining. Cones ovate or oblong, terminal at the points of the ipper liranchlets, solitary, pendulous, yellowish brown, with many linear, extended, slarppointed braeteas, loosely imbricated; from two to tlree inches long, and rather more than one incla in diameter. Scales rounded, smooth, leathery, concave, quite entire, thin, and persistent, or not falling off after the seeds are ripe. Bracteas, linear, threepointed, the middle one much the longest, the two onter oues being very sloort, membranaceous, but twice as long as the seales, and not reflexed. Seeds very small, with the wings little more than a quarter of an inel long.

A large conical tree, with smooth loark; when young, full of turpentine ; but when old, with a rugged, grayish-brown bark, from 12 to 14 incles thick, and attaining in its native country; under favourable circumstances, to a height of from 100 to 200 feet, and from two to ten feet in diameter.

The trunk of this Fir for two-thirds of its diameter in the centre presents a reddish colour, and yields but little resin or turpentine, but excellent timber ; while the remainder or outer part is white, porous, tough, and not very durable.

It is called "Sas-coo-pas" and "Paps" by the Indians along
the Columbia River and on the N. W. coast of Anerica, and which signifies, in their dialects, Big tree and Great fir. Professor Rafinesque mentions a variety of the Donglas fir, under the name of Abies mucronata, velr. palustris, as having been found by Lewis and Clark, during their exploratory expedition in the Oregon country, growing in low or mashy grounds, only 30 feet high, but with spreading brancles and a stem two feet in diameter.

It is found in inmense forests, in the nortli-west part of Ameriea, and at different elevations on the Rocky Mountains, furming a small dense little bu-l not a yard high, at the top of those mountains, but becoming larger and inore stately as it deseends the sides, and finally it becomes those mighty giants, eight or ten feet in diameter, and from 1.50 to 200 feet high, in the lower valleys, at the base of the same range, and along the banks of the Columhia River. It is also found aboudantly in California, and the following variety in Mexieo:-

Abins Dotglasit taxifohia, Loulon.


This very distinct variety has much longer leaves, and of a deeper green than the species, with the eones much shorter, but broader and less pointed; the extended bracteas are also much shorter, and not much longer than the seale:-

A handsome small tree, growing from 30 to 40 feet high, with horizontal bramehes and straight branchlets, little forked, found on the Real del Monte mountains, in Mexico, at an elevation of from 8000 to 9000 feet, ind in the Oregron country.

## Abies Dofglash fastighata, Kuighe.

A variety with its hranches aseending, and much more conical and comprate in its outline than the species.

Abies Doucilasif Standismana, Gordon. Mr. Standish's Douglas Fir.
Leaves linear, flat, and rather distantly placed, more or less spirally all round the young shoots, but finally on the more adult ones somewhat irregularly arranged horizontally in two rows, pointing more or less obliquely outward, and from one inch to one and i half long, and about three.quarters of a line broal; they are nearly all of an equal length along the shoots, and blunt-pointed, except those nearest the ends of the principal shoots, which are somewhat acute; butall of them are of a dark glossy green, and chamelled along the mid-rib on the upper surface, aud with two sunken, silvery white, or glaucous bands helow, hetween the thickened mid-rib and reflected margins, both of whicl are of a bright, glossy green, and tapering into a short, stout, more or less twisted footstalk inserted in a little shallow, but somewhat elevated eircular socket at their base. Buds few, seattered along the upper part of the shoots, and placed singly at the points, bluntly oval, and covered externally with broad, ciliated, or fringed scales of a dark hrown colour, and free from resinous matter. Branches rather numerous and invegularly placed along the main stem, spreading, and with the points somewhat elerated; leading shoots long. rather stout, and twig-like. Branchlets few, rather long, straight, and more or less in two rows, placed somewhat obliquely along the principal branches, those of the weaker ones being a little declining, and jointed at the junction of each successive growth. Bark on the younger parts smooth, ashy-gray, and furnished with numerous blisters filled with resinous matter, similar to that on the Douglas Fir. Cones unknown.

This very remarkable kind was first observed by Mr. Standish in his Nursery at Bagshot, growing amongst some seedling Abies Donglasii raised from English saved seed, gathered from a Douglas Fir growing in close proximity to some large Silver Firs.

The original plant, which, in 1861, was 10 or 12 feet
high, and about as many years old, had quite the habit and general outline of Abies Douglasii, and of which it appeared to be either an accilental seedling variety, or probably a hybrid between that kind and the Silver Fir (Picen pectimata), as its general appearance and history would seem to indicate.

It is an fine and distinet kinch, on accome of its large, dark, glossy green folinge, which is quite silvery below, and as large a.s those of the common Yew. The original tree is quite hardy, not being in the least injured by the severe winter of $1860-1$, although in an open and fully exposed sitnation in the Royal Nursery at Bagshot.

Abies Doutciasit pendela, Puilutore.
Syn. Abies tasifolia pendula, Hont.
This raricty only differs in having its secondary branches and shoots pendulous.

## Abies Dotelasif S'tamit, Hott.

This is a nice variegated variety, which orisinated at Castle Kemelly, the Earl of Stair's residence in Scotland. It was described in the Gumdeners's Chronicle, Nov. 18, 1871, and in the Gevelen, Nov. 23,1572 , as a veritable silver or almost a pure white spruce. It appears, however, to partially lose its silvery appearance towards winter.

No. 17. Abies Fobtlani, Limelley, the Intermediate Fir.
Syn. Abies Jesuensis, Liudley.
. Picea Fortunci, Murray. Jesoensis, C'arière.
" Pinus Fortmei, Perluture.
, Keteleeria Fortunci, C'urrière.
Leaves solitary, not very thickly placed, somewhat two-rowed, or spirally arranged round the shoots, persistent, spreading, and remaining on the branches for several years; from one to two inches long, and from one line to one and a half broad, linearlanceolate, tapering to a sharp point, straight or very slighty faleate, smouth, flat, and glossy, of a light yellowish-grgeen on the upper surface, a little paler heneath, hat not glancous, and with a projeeting rib along the middle on both faces, especially along
the upper one, where it is very sharply elevated and terminated by a long slender point, frequently of a dark brown colour in the adult leaves, which are very entire and sessile. Buds small and surrounder by long slender scales. Branches in whorls, slender and horizontal, with the lnwer ones frequently bent downwards at the ends, and the laterals quite straight, slender and stiff. Shoots smooth, of a rusty brown, and somewhat downy by the numerous short hairs on their surface, particularly when quite young. Cones erect, somewhat terminal, on longish foot-stalks, cylindrienl, abruptly tapering at the point, quite straight, rather narrow, and of a beautiful violetpurple when young, but purplish-brown when fully matured, and from six to seven inches long, and from one and a half to two inches in diameter. Scales numerous, very broid, coneare, rounded at the edges, irregularly crenated on the margins, smooth, thin, rather loosely placed, but persistent, nearly equal in size, and from one inch to one and a quarter long, and the same in breadth. Seeds half an inch long, angular, soft, and full of turpentine, like those of the Piceas; wings permanent, short, but broad, with the inner side straight, and the outer one rounded.

A large tree, 60 feet high, with a straight stem, covered with a smooth ashy-gray bark, a little cracked outside, and a flat, wide spreading head, like that of an old Cedar of Lebanon.

It was first introduced by Mr. Fortune, who found it planted about temples at Foo-chow-foo, in the north of China.

Much difference of opinion exists respeeting whether this kind is a Spruce, a Silver Fir, or a new genus ; and which arises from its having erect, cylindrical cones, with persistent scales, soft angular sceds, full of turpentine, and permanent wings, and flat, linear-lanceolate leaves, somewhat spirally arranged on the young shoots, and more or less two-rowed on the adult parts; from all of which it would seen to be intermediate between the two, but having persistent scales on the cones, it must be considered as belonging to the Spruces rather than the Silver Firs.

No. 18. Abies Mertenstafa, Linulley, the Califomian Hemlock Spruce.

> Syn. Abies heterophyiln, Rafinesque. taxifolia, Jefficy. Cianadensis taxifolia, Gordon.
> Albertiana, Murray.
> Bridgesii, Kelloy.
> Pinus heterophylla, Endlicher:
> Mertensimin, Bongard.
> Picea Mertensiana, French Gordens. Tsuga Mertensiana, C'amerre.

Leaves solitary, linear, somewhat in two rows, flat, and channelled on the upper side, tapering to the linse, with is very short foot-stalls, and somewhat obtuse at the point, from one half to threc-quarters of an inch long, and rather more than half a line broad in the larger ones, but very unequal in size, some leing very lung, while others are very shome and intermixed on the same shont, of a rery pale grean colour, slighty glaucons below, aml thickly placed on the hranehlets. Branches very numerons, slender, and more or less bent downwards at the ends. Branehlets very slender, flexible, long, drooping and mather downy when young, hat much tuberculated when old from the falling leaves. C'ones solitary, ovate, blunt at the ends, three-quarters of an inch loner, without any foot-stalks, and pendulous at the ends of the shoots. Scales entire, kid-ney-shaped, smooth, few in number, and very persistent. Seeds very small, light brown, and furnished with ovate wings, half an inch long.

A handsome, bushy, round-headed tree, growing from 100 to 150 feet high, and from four to six feet in diameter, with a straight, round stem, tapering upwards, with rather a thin and smoothish lark.

A large tree, fisund abundantly in Califomia and the Oregon Jerritory, with it thin, cark-eoloured bark, mueh divided by simall longitudinal fissures on the stems of old trees, Lut some-
what smooth on the younger ones. It is ealled "Lueatzin" hy the Indians in California. The timber is soft, white, and diffieult to rive or split.

No. 19. Abies Pattoniana, Jefirey, Patton's Californian Fir.

$$
\begin{aligned}
& \text { Syn. Abies gracilis, Hort. } \\
& \text { " } \quad \text { Williansonii, Neuberry. } \\
& \text { " } \quad \text { Hookeriana, Murray. } \\
& \text { " Pieea Californiea, Carriere. } \\
& \text { " Tsnga Hookeriana, Carrière. }
\end{aligned}
$$

Leaves solitary, alternate, thickly seattered on all sides of the branehes, petiolate, trigone, stiff, curved, acuminate, and rather blunt-pointed, three-guarters of an inch long, and nearly onetenth of an inch broad, triangular, a little deelining, and springing from a small triangular pedestal of soft, spongy, elastic bark at the junetion with the shoots; bright greeu above and glauceseent beneatli; buds irregularly seattered along the twigs, terminal ones very sealy, pointed, and destitute of resin, the bud scales continuing to encircle the twigs for years afterwards. Branches and young shoots densely covered with a brown woolly substanee, and rough, sealy bark, slender, and rather drooping. Cones, oblong-cylindrieal, tapering slightly to both ends, sinooth externally, from two inehes to two and a half long and one inch broad, pendulous, crowded, and produced at the points of the top branches, and when ripe of a light brown colour. Scales rounded, thickest in the centre and thin on the edges, entire, or somewhat wavy on the margins, very numerous, nearly all of a size, five-tenths of an inch broad, and rather loosely placed. Seeds very small, with rather broad wings, a quarter of an inch long. Stem straight, with numerous slender drooping branches, not very prolific at the extremities. Bark, rough, scaling off in irregular flakes, and of a reddish brown colour, particularly on the young shoots. It yields but little resin, but the timber is hard, fine-grained, and of a reddish colour.

The Abies Pattoniana oceupies the most elevated parts of the Sierra Nevada, and seldom deseends lower down than 100 yards
from the line of perpetual snow, where in moist situations it forms a tree from 100 to 130 feet high, with a trunk sometimes three feet in diameter. Its branches spread out horizontally from the main stem, but beeome drooping towards the extremities, and with the branchlets thickly set round with solitary leaves about two-thirds of an inch long, grass green above, and pale green beneath, with those towards the points of the branchlets sprealing, and silvery white below. The cones are about two inches long, and one in diameter, in the widest part; when young, dark purple, but when old, pale brown. Male flowers, or catkins, two-cighths of an inch long, and of a violet colour, The timber is of a reddish colom; close, and fine-grained, and remakable for its struggth and durability, and as an ornamental tree for parks or pleasure grounds, or for general planting, no tree can be more recommeniable: and, julging from the soil and situation in which it grows, it may be considere 1 the hardiest of all the Californian kinds.

Mr. William lohb foum it in abundanc: on the highest peaks of the Sierra Nevadit, near the heard waters of the north tributary of Feather River, and more to the south, towards Lake Bigler; forming immense trees, in habit of growth and grneral appearance much resembling the "Deodar," but the lattomiana being more thickly banched, and densely clothed with foliate, is by far the handsomest tree.

Mr. Jeffery; who discovered it on the Mount Baker range, in Northern Califormia, describes it as a muble tree, rising to a height of 1.50 feet, and $1: 31$ feet in circuinference, and towering above the rest of the forest, but as it ascended the mountain, it got gradually smaller, till at last it dwindled down into a shrub not more than four feet high. It is found at ele vations of froin 5000 to 6000 feet, on Cascade Mountain, and on Mount Baker raure, in Upper C'ahfornin.

It is guite harly, and has been named by Jefficy, in compliinent to Mr. Patton, of the Cairnies, in Scontland, a gentleman mueh interested in conifers.

No. 20. Abies Tsuga, Siebold, the Japan Hemlock Spruce.

$$
\begin{aligned}
& \text { Syn, Pinus Tsuga, Antoine. } \\
& \text { " } \quad \text { " Araragi, Sicbold. } \\
& \text { " Tsugn Sieboldii, Carriere. } \\
& \text { " Micropeuce Sicboldii, Spach. } \\
& \text { " } \\
& \text { Abics diversifolia, Hort. } \\
& \text { " } \\
& \text { " }
\end{aligned}
$$

Leaves solitary, somewhat two-rowed, thickly set on the branches, frequently alternate, lower ones reflected, and on short, round foot-stalks ; they are flat, slightly linear, and tapering to an obtuse (rarely acute) point, entire on the edges, smonth, dark shining, green above, ribbed, and marked beneath witl two white glaucous bands. Branches numerous, irregularly spreading, and drooping at the ends. Branehlets slender, recurved, and irregularly furnished with small buds. Cones very small, solitary, terminal on the euds of the branchlets, one inch long, and three-quarters of an inch broad, clliptic, blunt-pointed, and remaining on the tree after the seeds lave fallen out. Seales permanent, imbrieated, 20 or 30 in number, leathery, shut elose, largest in the middle, slender at the base, partially rounded or obtuse on the apex, thin, and of a shining pale brown colour. Bracteas very short, hardly longer than the foot-stalk of the seale, narrow, truneate, and irregularly bifid. Seeds very small, with thin membrancous wings.

A large tree, from 80 to 100 feet high, with the appearance and labit of the Hemlock Spruce ( $\Lambda$ bies Canadensis), but with the timber of a yellowish colour, and much ralued by the Jrpanese.

It is found in the northern provinces of Japan, on the mountains of "Matsu" and "Dewar," at an elevation of 6000 fect, and on the sacred mountrin, "Fusi-Yann," which is the highest mountain in Japan ( 14,000 feet), and whose sides are covered with dense pine forests, chiefly composed of this kind, to an elevation of 8000 or 9000 fect.

The Japanese names for this Fir are, "Tsuga" (Y'ew-leaved) and "Araragi" (Vew-like). It is much used in Japan for planting round sacred temples, on account of its graceful appearance. There is the following variety :-

Abies Tsuga rava, Siebold, the Dwarf Tsuga Spruce.
This forms a little bush, seldom more than a yard high, with much smaller and shorter leaves than the species. It is much cultivated in pots, in their town grardens, by the Japanese, who call it "Hime," or "Eime Tsuga" (the dwarf yew-leaved Spruce).

## NEW OR DOUBTEUL SPECIES OF ABIES.

Abres Maximuwn\%if, Memencun, Maxinowicz's Spruce.
Of this kind very little is known, except that the young plants in cultivation are very like those of Abies Alcockiana.

## (icn. ACTINOSTROBUS. Miquel.

Flovers, moncecious, or male and female on the samo plant, but seprate and terminal; the male catkins egg-shaped, or somewhat glohular, the fermale ones solitary and globular.

C'ones, somewhat globular, solitary, and composed of six scales, dieposed in two vertical sets at the base, and woolly:
ralees or S'eales, convex on the back, those at the base mucl the shortest, with the interior ones much the largest.
seede, in twos, under each of the upper seales three-edged, and winged on each side.

Sred-lecres, in twos.
Leares, persistent, seale-formed, very small, in whorls of three, stifl, and very acute pointed.

Name derived from actes (aktis), a ray, and otpoßos (strolusi, a cone; the senles radiated.

Pyramidal busher, fomm on the south-west coast of New Holland.

No. 1. Actinostrobus pyramidnis, Miquel, the Pyramidal Swan River Cypress.

Leaves in threes, vertical, very small, scale-formed, threccornered, ovate, acute-pointed, rigid, decurrent at the base, and slightly spreading at the points. Bramehes alternate, ascending, slightly spreading out at the extremitics, very numerous, long, and slightly angular: Branchlets dense, dark-green, and having no particular direction; younger ones covered with spinescent leaves, partially imbricated; the adult ones stand out stiff, while those on the cone bearing lateral ones are seale-formed, very short, and entirely cover the stem. Cones solitary, somewhat globular, composed of six seales, in opposite pairs ; those at the base much the shortest, and the interior ones much the largest. Scales convex on the back, sharply ribbed, woody, and without any terminal sharp-point. Seeds, in twos, under each of the npper scales.

A dense, narrow, pyramidal bush, growing six fect high, with ascending branches, and dark green branchlets, found growing in the Swan River Colony, along the sea-shore, where it is brackish from being inundated, and along the south-western coast of New Holland.

It is not hardy.
No. 2. Actinostrobus acuminates, Parlatore, the Acuminate Swan River Cypress.

Leaves on the principal branches and branchlets in threes, about one-third of an inch longy and half a line brond, with the base decurrent and the npper part free, erectly-spreading, lincar, acute aud somewhat spiny pointed, the upper surface tolerably flat, the muder one convex and kecled, and the margins rough. Cones solitary, and produced at the curls of the short, erect branchlets; they are ovate-pointed, and composed of six seales in opposite pairs, all connected at the hase on a very short column, and nearly three-quarter's of an inch long,
half an ineh wide, and of a chestnut brown colom:. The seales are in sixes, nearly equal in size, and connected at the base on in very short axis, the lower ones are oblong-aeute and erect, and the upper ones narrow, spreading, and with acute spiny points; the sceds are in twos under each of the upper seales, and either two or three winged.

A low, erect, branehing slirub, fomme at the Swan River Colony, in Western Australia, and nut hardy in England.

## Gen. ARAUCARIA. Jussieu.

Finuers, diœcious, or male and female flowers on different plants.

C'ours, globular, and terminal.
Serales, decidhous, or partially so.
Sircle, mone or less attacherl to the seales.
Lecrece, same-like, persistent, and widest at the base.
Nerne, derived from Araueanos, a people of Chili, in whieh country Araucaria imbricata abounds, and where its seeds furnish a great portion of the food of the Indians.

The Arancarias differ from the troe Pines and Firs in having the sexes on separate trees; in the scales on the cones being one-seeded, and in the seels being more or less attached to the scales. They, hawever, arpuach nearest to the Genus Danmana, in being diaecious; but difler from them in the form of the leaves and scales on the cones; also in having bracteas to rach femmete flower, and in the seeds being more or less attached to the seales, and not free, as in the Genus Danmara.

Siclion I. COLUMBEA, Sulisbury, or the Thef Araucardas.
Cones very large ; seales slightly winged and deciduous; secds indistinctly attached at the base. Seed-leaves from two
to four, and germinating under ground. Leaves, on young plants, unequally formed.

They are all large trees, natives of Ameriea and Australia.

No. 1. Arauc'arla Bidwillif, Morlipr, Mr. Bidwill's Araucaria.

## Syn. Colymbea Bidwillii, ('nwì̀e.

Leaves ovate-lanceolate, rigid, that, deep-green, shining, and spiny pointed, generally forming two rows along the branchlets, and without any foot-stalles; narrow, and nearly two inches long on the young plants, but much shorter and broader on the more inature plants, and not more than three-quarters of an inch long; those on the stem alternate, those on the branchlets somewhat two-rowed. Brauches in regular whorls, from five to seven in number, but frequently more on the adult trees; they are horizontal, with those near the base sometimes deflected and not more than 12 feet in length on old trees. Branchlets in opposite pairs, about 18 inches long, slender, and rather thinly covered with flat, distant, sharp-pointed laves. Cones, ovate-globular or oblong, about nine inches long; sometimes nearly as broad, and a little depressed at the ends. Scales large, projecting, with an acute, transverse ridge across the centre, highest in the middle, and furnished with a sharppointed reclining hook at the extremity. The seales are from one to two inches broad, and from half to three-quarters of an inch thick, loosely adhering, and very deciduous when the sceds are ripe. Seeds very large, from two to two and a half inches long, by three-quarters of an inch broad, terminating at the apex in short callous marginal wings, furnished with long, flat, tapering, eurved points, more than an inch long. Nuts eaten by the aborigines.

A majestic tree, with a very straight cylindrical trunk, growing from 100 to 150 feet high.

It is found on the Brisbane mountains and in the neighbourhood of Moreton Bay; in Australia. Mr. Bidwill, after whom it was named, clescribes it as overtopping the forests, with a
clear, smooth, blackish trunk, and depressed, loose, conical head and that the timber is very fine, close-grained, and very cluable.

It is the "Banzal-tunza," or "Banya-tunya," of the natives, and is not hardy.

> No. 2. Araccimba Brasidievsis, Richaid, the Brazil Araucaria.

Syn. Pinus dioiea, Amebider.
(2 Colymbea angustifolia, Bertolumi. Brasiliensis, Curtière.
Leaves linear, lanceolate, quite straight, and entire; loosely imbricated, and tapering to a very sharp point; from one to two inches long, and a cuarter of in inch broad, seattered all round the leading showts, and sprendiner; the ohder stem ones imbrieated the reverse way, and remaining on after they become brown, homlest at the hasce, decurrent, and frecuently a little wisted at the hase, gomeg ones keeled and glaneous below, light green and shining ahove. Branches, numerous, mostly in horizontal whorls, lower ones declining, and partly covered with the adult leares, upper ones aseending, and only divided towards the extremities; branchlet. slender; leafy, spreading, undivided, and bending gracefully downwards, the lower ones soon turning brown and falling off. Cones very large, grobular, sometimes slightly depressed at the extremities, solitary on the tops of the branches, erect, and without any foot-stalks, six inches long, narly the same in diameter, and of a yellowish brown colour. Scales thick, compressel, welge-shaped, oblong, foursiderl, ind closely placed together, of a firn, corky texture, "ach terminating in a lanceolate, aente, recurved spine, hollow within at the base on the upper side, and covering a monospermous mint, two inches long, covered with a sinooth reddish-hrown leathery skin. Seeds very large, oblong, eatable, and without any winger appendage.

A very landsome pyranidal tree, growing from 70 to 100 feet high, with a straight stem, covered with tolerably smooth
bark, except near the upper part, where the leaves still adhere in a reclining, imbricated position.

It forms immense forests between the province of Minos Geraes and Soam-Paulo, to the north of Rio de Janeiro ; the nuts, which have very little resin in them, are sold as an article of food in the markets of Rio, and the fragrant resin which exudes from the trunk of the tree is mixed with wax to make candles.

Its Brazilian name is "Curi."
It is tender, and has the following varieties:

> Araucaria Brasiliensis Ridolfiana, Savi.
> Syn. Araucaria Ridolfi, Hort.
> $\begin{array}{lll}\text { " } & \text { Lindleyana, Vun Houtle. } \\ \text { " } & \text { R } & \text { Ribbiani, Italian Gurdens. }\end{array}$
> „ Colymbea Brasiliensis, Cerriere.

This variety is more robust, and with larger and longer leaves, and, according to Count Ridolf, is very distinct when old.

It is found on the ligher mountains about Rio, and is hardier than the species.

Araucaria Brasiliensis gracilis, Cumiere.
Syn. Araucaria clegans, Knight.
" ", gracilis, Ven Houtte.
Leaves, when old, bright green, but when young somewhat glaucous; they are lincar-lanceolate, rather dense, and less rigid, but much narrower than those of the species. Branches slender and spreading; branchlets undivided and bent downwards at the ends.

This variety somewhat resembles Cumninghamia Sinensis, and is much smaller and slenderer than the original form of the species.

## Aralcaria Brisilievsis Saviava, Parlatore.

 Syn. Arauearia Saviana, Parlutore.Leases, when young, somewhat glaueous, and when old large, linear-lanecolate, closely placed, and more or less tmrned backward. Cones very large, and globose or somewhat oval ; seales broad, with long, linear-lanceolate, reemrved, spiny points.

It is said to be a native of the mountains of Bolivia, and to be much hardier than the species, which is found in Brazil.

> No. 3. Aratcaria hmbrcita, Peroit, the Chili Pine or Monkey Puzzle.

Syn. Arauearia Chilensis, Midol. Dombeyi, Richured. Abies Colmularia, Disfont. ., Araucama, Poiret.
" Cohmbea quadrifiria, seliabrry.
"Culymbea imbricata, C"oricire.

- Dombeya Chilensic, Lecturercl:

Arancana, Reuschel.
" Quarrifaria imbricata, Manutti. Pinns Araucana, Mulince.
Leaves in whorls of from seven to eight in number, ovatelanceulate, spirally placed, rigid, concave, straight, smooth, shiming, deep green, very pungent, elosely imbricated and cartilaginums on the margins, entircly cotering the stem, and remaining on for several yeas, from three-quarters to one inch and three-quarters long, very shap-pointed, somewhat thickened at the base, l, without any foot-stalk, and remaining on the shoot; for years quite green, but getting more separated, elosely pressing along the stem, and turning backwards as the tree increases in circumference. Branches horizontal, somewhat ascending at the extrenities, regularly divided laterally, in opposite pairs, quite straight, from five to seren in it whorl, and diminishing in length as thoy ascend higher up the tree, matil at the top they terminate in the leading shoot, and form
a kind of pyramidal head, lateral branches long, straight, in opposite pairs, and regularly divided; bramehlets cylindrieal, thickly covered all over with leaves, rather slender, undivided, and mostly bent downwards; male and female on separate trees, male catkins ovate-cylindrical, in clusters of from 6 to 7 at the ends of the branches; females solitary and ereet. Cones very large, globular, solitary, and creet on the ends of the top, branches; from six to eight inches broad, and from six to seven inches long, of a dark brown colour, with the scales regularly and closely imbricated, but when ripe, quite deeiduous, and soon dropping to picces. Scales, numerous, wedge-shaped, eurved near the ends, and deciduous, one inela broad at the widest part, terminating in a long, flat, thin tail, one and a half inch long, and tapering to a fine point. Seeds, very large, from one to one inch and a half long, bluntly four-sided, afterwards gibbose, compressed on the opposite sides, and ending in a long, flat, inflexed, tapering tail, like those of the seales; of a deep brown colour, one ineh and a quarter long, and seven-cighths of an inch at the widest part, and of a leathery texture, each cone producing from 200 to 300 seeds, two to each scale, and ripening towards the end of March.

A noble tree, growing 150 feet high, and indigenous to Southern Chili, where it is found on the western acelivities of the Andes, often reaching the snow line, but never more than 2000 feet below it. It forms vast forests in a part of the Andes inhabited by the Araucanians, a people who are said to pride themselves on their name, its signification being frank or free. It is found also in great abundance on the mountains of Caramavida and Naguelbutal in Chili, and in the neighbourhood of Concepcion. The Coreovado, a mountain that rises opposite Chiloe, is said to be studded flous to the snow line with large groups of these beautiful trees.

The timber is hard, heavy, dmable, yellowish-white, fibrous and beautifully veined, eapable of receiving a high polish, and easily worked.

The tree is full of a milky white resin, and the Araucano

Indians eat the nuts, either fresh, boiled, or roasted, and distil from then a spirituons liquor, dry and prepare a kind of flour and pastry from them, or dry them for winter store, and for trading to Coneepcion and Valdivia, from whence they find their way to Valparaiso and Lima. It is the "Pchnen" or moukey-puzzle of the Chilians, no animal of that kind attemp,ting to climb the trees.

Dr. Poppige says, such is the extent of the Aratucarian forest, ofl the Chilian Andes, and the amazing duantity of mintritious seeds that each full-grown tree produces, that the Indians are ever secure from want; it yielding to those nomad nations a vegretable substance, that is found in greatest plenty, the more they reeern from the whites. The kernels are dried, after being boilerl, for winter use ; their time of ripening heing towards the end of March, at which time the cones hreak up and fall to piepes shedding their seerls on the ground, and thus hestowing a great bron on the poor ludians, which mothing but a small parrot divides with them. Aud there is but little dould when the mmnerous somg Araturarias which are now phantine, or have been planted in Europe, hecome large, and arrive at a frut-bearing state, hut that as great a boon will be given to finture generations as that confered on the jreecnt one by the finit of the Spanish chestnut, which is now su largely consmed in all the towns and cities of Europe.

The Chili Pine was first introdueed inte lengland by Mr. Menzies, in 170.j, and presented to Sir Joweph Banks, who planted one of the first plants at his residence, Spring Grove, near Homslow, and sent the others to the Royal Gardens at Kew : and from which ciremustance it formerly was called Sir Josph Banks's Pine.

There are several seedling varieties of the Chili Pine, distinguished in the murseries, but such differences are only retained white the plants are young, with the exception of the variegated kind.

## Araucaria Imbricita Variegata.

A striking varicty, with pale straw-eoloured leaves, and oceasionally the young shoots intermixed with the ordinary deep-shining green ones.

It originated in Mr: Cilendinning's nursery at Turnham Green.
No. 4. Araucaria Rulei, Mueller; Mr. Rule's Aranearia.
Syn. Eutactal Rulci, Verlot.
" " Muclleri, Carrière.
" $\quad$. Rulei polymorpla, Currière.

Leaves from one half to two-thirds of an inch long, lanceolate, closely imbricated, and of a deep glossy green, and although acute pointed, not pungent. Branches numerous, rigid, much divided, and symmetrical. Cones nearly globular, with the seates an inelı or more broad, and furnished with projecting, narrow, lane-shaped points an inch long.

A fine bushy-headed tree, growing abont 50 feet high, with the branches extending 30 feet in diameter, very rigid, tabular-formed, and six times more numerous than those on the Chili Pine (Arauearia imbricata), the whole of the branehes being covered with beautiful clark glossy green leaves, closely and multifariously imbricated. It is found on one of the islets near New Caledonia, covering the summit of an extinet lofty volcano, and growing in the débris, which is as hard as adamant in summer, and deluged with rain in winter. It attains a less gigantie size than any of its congeners, and in habit bears more resemblance to the Chilian Araucaria imbricata than the Australian one ealled Bidwillii, from whieh it especially differs in its foliage, which, although acute, is not pungent or striolated.

This kind belongs to the true Arauearias, and was named by Dr. Mueller, of Melbourne, in eompliment to Mr. John Rule, a nurseryman at Victoria, in Southern Australia. It will be found quite tender for the open air during an English winter.

Mr. Dunean, who first discovered this species, says that the seminal leaves of Araucaria Rulei pass through sin stages before they are fully claborated, and those stages resemble the foliage of all the others of the genus from Araucaria C'ookii to imbricata. The leaves un ohd trees; however, are regularly and evenly produced all romul the branches: and are broad, flat, and inemred or pressed against then, so as to lie imbricated over each other, and thus grive to the bramches considerable bulk.

Section II. EUTACTA, Link, the Needle-leated on False: Absictaris.

Comes small, terminal, and globular. Seales broadly winreel, and more or less persistent. Seeds visibly fastened at the hase. seed-laves in four, and developed above ground. Leaves on the young plants unequal shipeed and small.

Large trees, matives of Australia.
No, j. Alalcara C'ookir, R. Broren, Captain Cook's Araucaria. Syn. Aramearia columnaris, Ifoteri.
" Cupressus columnaris, Fomstri:
, Araucaria subulata, Virillurd.
" Entacta C'ookii, C'orripor.
" " minor; "
" ". Pancherii, "
Leaves alternate, scattered all round the sheets, those on the larger ones compressed, spretding, or curved, from half an inch to one inch loner ; those on the branchlets of young plants much more slender, shorter, and more numerons, incurved, and somewhat four-sided; those on the adult trees closely imbrieated, rounded, and almost inlaying upon the branchlets. Branches in regular distant, horizontal whorls, slightly bending downwards, and again aseending towards the extremities; branchlets in two rows, along the sides of the branches, frequently
declining, and closely covered with foliage. Male catkins, terminal, ovate, and from one and a half or two inches long. Cones ovate, rounded at the ends, from four to six inches long, and from two and a half to three and a half inches broad, lateral, and sometimes in pairs. Seales large, gibbose, coriaceous, very thin on the edges, elosely imbrieated, and terminating on the summit, in a long, looked, spiny appendage.

A very tall tree, with a straight stem, covered with a thin glossy bark, resembling the Norfolk Island Pine, but differing in several respeets, growing from 150 to 200 feet high, with a very narrow head, very much resembling a well-proportioned fictory chimney. It is found abundantly on the islands of Aniteura, New Hebrides, and New Caledonia.

It is quite tender.
No. 6. Araucaria Cunniaghamii, Aiton, Cumingham's Araucaria, or Moretou Bay Pine.

> Syin. Altingia Cunninghamii, Don.
> $"$ Eutacta Cunninghannii, Liuli. $"$ Eutassa Cunninghamii, Spect.

Leaves very rigid, those on young trees vertically compressed, sharp-pointed, straight, alternate, decurrent at the base, sinooth, dark green, shining, and disposed all round the branches, half an inch long, swelling towards the base, and awl-shaped; those on the full-grown trees lanceolate, acute, imbricated, eurved, awl-shaped, widest at the base, and reelining on the prineipal branches and stem. Branches in lorizontal whorls of from six to eight in number, spreading out straight, or slightly aseending when young, but bending downwards when old. Branchlets distant and alternate. Male eatkins solitary, cylindrical, terminal, three inches long, and about the thickness of the middle finger. Cones ovate, three inches long, and nearly the same in thickness, terminal on the upper branchlets, and without foot-stalks. Scales wedge-sliaped, numerous, thick, leathery, membrancous, winged on the margins, and wavy, half an inch broad, and terminated by a linear; awl-shaped, recurved, stiff,
spiny point, one-third the length of the scale. Seeds flattened, and appearing as if concealed within the seales, which they resemble.

A large tree, growing from 100 to 1330 feet high, and 14 or 1.) feet in girt, with it clear stem SOf feet high, and a rather thin, hose head, found forming vast forests along the shores of Moreton Bay and on the alluvial banks of the Brishane River, in Australia.

There are the folluwing varieties:-

## Araceara Cuxifghami gladea, Aiton.

Syn, Araucarit glauea, Lordiges.
This differs from the species in nuthing except in the glaucous culour of its leaves and young shoots. It is a very striking varicty, and was first imported by Messrs. Lodlliges from Moreton Bily:

Aratesaria ('ranisghami longifonda, Antrime.
This variety has much longer and stmighter leaves than the species, and is alturether a more robust tree.

No. 7. Arsectama bixcelsis, R. Brouen, the Norfolk Island Pine.
Syn. Dombeya cxeclsa, Lambert.
.. Eutassar heterophylla, Salishory.
, Futacta cxcelsa, Limk.
. Colymbea excelsa, stprengel.
, Altingia excelsa, Laudon.
Leares unequally awl-shaped, compressed, somewhat foursided, curved, and of a light green, the adult ones imbricated, bent inwards, and pointless, from half to three-quarters of an inch long, thick, three-culged, and recurved towards the branches. Branches recgulaly verticillate, spmead nut straight, or curved upwarls at the extremities; lateral mes oplmsite or alternate. horizontal, or dromping, very dosely placed along the sides in
two rows, slender and undivided. Cones glohular, from five to six inches in diameter, crect on long foot-stalks, and of a brownish colour. Scales large, broadly winged, thick on the upper part, and thin on the edges, woody, and terminating in an incurved pointed projection, one-third of an inch long. Siceds large, hroadly winged, thick on the upper part, and thin on the edges, having the appearance as if concealed within the scale.

A majestic, handsome tree, with a perfectly straight stem, attaning the height of from 150 to 230 feet, and from eight to eleven feet in diameter, free from branches to the height of 80 feet. It is found in Australia, but principally on Norfolk Island.

It is not hardy.
Aratucaria lixcelsa variegata, Hort., the Tariegated Norfolk Island Pinc.
This variety is of much slender growth, with a portion of the branchlets of a pale yellow colour.

## Gen. ARTHROTAXIS. Don. The Jointed Yews.

Flower's, moncecious, or male and female on the same plant, but solitary, terminal, and separate; although sometimes the different sexes are found entirely occupying distinct plants.

Coner, small, orate or globular, and woody.
Scales, oval, entire, destitute of bractens, and imbricated.
Seeds, from three to six under each scale.
Secd-lecuves, in twos.
Leares, without foot-stalks, seale-formed, and cither closely inlaying along the brauchlets, or open and ineurved.

Xeme, derived from "Arthron," a joint, and "Taxis," arrangement, the shonts having the appearance of being jointed. All small trees, natives of Tan Diemen's Land.

No. 1. Abtmrotixis cupressoides, Don, the Cypress-like Jointed Yew.

Syn. Arthrotaxis imbricata, Muule.
, C'uminghamia cupressoides, Zuccurimi.
Leaves very small, elosely inlaid alone the banehlets, imbricated, ovate, blunt-pointed, thick in textmo, smooth, and brioht glossy green, from one to theo lines long, ohsemely kecled on the hack, and concave on the fnee, entirely adhering at the base and scarinse. Male catkins without foot-stalls, solitary, or in lonse heads at the ends of the branchlets, with numernus close, seale-formed leaves at their base. Cones small, roundish, and nmmerons. Seales wedge or lance-shaped, woody, much thickened at the part which eovers the sceds, almost shield-shaped, trigrone, and uneren on the surfice. Foot-stalks compressed and four-sided.

A small ereet tree, from ? () to 30 feet high, imels branclecd and with numerous branchlets, which are slender, sprending or pendulous, and cylindrical.

It is found at Lake St. Claire and along Pine River, in Tasmania, and is tolerably liardy.

## No. ᄅ. Arthrotaxis Gunnlana, Hooker, Gmm's Jointed Yew.

Leaves spimally arranged, spreading, slightly curved upwards, very rigid, linear-lancerlate, widest at the base, regularly tapering to a sharp spiny point, distantly dispoed along the hranchlets, and without my foot-stalks, consex, and bright ghussy green on the back, that, or slightly concare, mod frequently entirely covere? on the upper surface with a glancous white pewdur, and from a quarter to half an inch long, and nearly a line wide at the base. A large bush, with numerous mather long hanches and l,manchlets, which are hut hetles divided, But sometimes drooping at the emels.

It is a native of Tasmania, and is tolerably hardy.

No. 3. Arthiotaxis laxifola, Hooler, the Open-leaved Jointer Yew.
Syn. Arthrotaxis Donniana, Parler:
$" \quad$ Doniana, Ilcule.

Leaves spirally disposed, loosely imbricated, somewhat incurved, ovate or oblong-lanceolate, keeled on eonvex on the back, coneave on the face, adhering at the base, free and spreading at the points, and acute; branchlets, long, terete, slender, erect, forked, and of a bright green colour. Cones globular, or somewhat egg-shaped, and nearly three-quarters of an inch long; scales spirally inserted at the base, imbricated, leathery, ovate-acute, narrow, and stipitate at the hase, seeds mostly in fours under each seale, somewhat lineal and compressed.

This kind forms a small branching tree from twenty-five to thirty feet high, found near the cataracts on the Meander in Van Diemen's Land. It is tolerably hardy.

## No. 4. Arthrotaxis selaginoides, Don, the Sulago-like Jointed Yew.

Syn. Arthrotaxis Alpina, Vum Houtte, Cumninghamia sclaginoides, Zuccurini.
Leaves ranged in five spiral rows, closely placed along the shoots, slightly imbricated, ovate or ovate-laneeolate, incurved, leathery, rigid, blunt-pointed, keeled on the back, and seldom more than four or five lines long, but frequently very much shorter; level on the inside, couvex or obsoletely keeled on the back, and very smooth; at first light green, but afterwards of a much deeper colour, and quite glossy; rigid, dilated, and firmly adhering at the base. Male and female flowers sometimes on the same plant, sessile, solitary, and placed at the ends of the branchlets. Cones globular, the size of a walnut, with thick woody, non-peltate seales, on thiek font-stalks, almost tetragone, and thickest at the part covering the secds, oval on the top, acute, and laying close together.

Seeds in threes, but more frequently in twos (one being abortive), under cach seale, with hardly any wings, the wing beiug constituted in a great part by the epidermis of the seed; shell thin and erusty:

A bush from 10 to 20) feet high, with spreading ever-green branches :und branchlets, tridently divided, or sometimes only forked at irrefular distanees; the adult stems are covered with a corky bark, and the hanches with leases united aloner the whole surface, and persistent, lateral unes short and completely covered with leates drawn elune together, and appearing as if jointed. It is found growing at the cataracts on the Meander, in Tasmania (Van Diemen's Land).

It is tolerably hardy:

Gen. BIOTA. Dw. The Chinese Arbor-Vita.
Fluners, moncecious, or male and female on the same plant, but sejamate; male catkins owal or conienl, female ones solitary and globular.

Cones, roundish, spuarose, and composed of from six to cight leathery valres or scales.

Sialres, in (1) menite eross pairs, peltate, and furnished with a spiny point just below the apex, and containiner each two seeds at the hase.
sirds, in twos under each seale, bellying, erustaccous, and wingless, or only furnished with rudimentary ones.

Seral-lences in twos.
Lenere, seale-formel, very small, in opposite cross pairs, andre-sed and tiled, or imbrieated in four rows.

Ne!me, leviverl from "bi," two, and "otis," an car; the common English one, Arfor-Vitic (tree of life), is deduced from its China and dapan appellations. In Japan it is called "Hiba" (tree of life), and in China, "Mak" (everlasting life), on account of tho plants being overgrecu and of a beautiful bright green at all reasoris of the year.

All the plants belonging to this genus were formerly included in that of Thuja, and are large bushes or small trees, found in China, Tartary, Japan, and the North of India.

## SECTION I.

No. 1. Biota Orientalis, Don, the Chinese Arbor-Vit $x$.

> Syn. Thuja Orientalis, Limnceus. " ", acuta, Monch. "Cupressus Thuja, Tar'a-Tozs. "Platycladus strictus, Slpuch.

Leaves on the adult plant very small, in four rows, ovate, rhomboid, acutc-pointed, scale-like, imbricated, adpressed, decurrent, and furrowed along the base, the outer or marginal ones lapping over on both sides, the upper and lower ones flat, with the points thickened, glaucous, sreen, and shining when young; afterwards dull green when old, and glandless. Branches somewhat vertical and horizontal at first, but soon afterwards turn up at the ends, and finally become fastigiate, with the stem; branchlets disposed in two rows, densely crowded along the extremities of the branches, and placed sideways. Cones, ovate-clliptic, six-valved, solitary at the ends of the small brauchlets, half an inch long, green when young, but light brown when ripe, and composed of six seales, two being central and four around the sides. Scales blunt, central ones truneate, with a short stout projecting point below the apex, each scale covering two naked, egg-shaped, somewhat angular, wingless seeds.

A low evergreen trec, or pyramidal bush, densely clothed with deep green branchlets, found abundantly in China and Japan, growing in rocky situations and on the mountains, where it attains a height of 18 or 20 feet. It has the following varictics:-

Biota Orientalis aurea, Hort., the clwarf golden Arbor-Vitie. Syn. Biota pyramidalis pumila, Carrière.

Syn. Thuja aurea, Wateici:
Orientalis aurea nana, Hort. compacta aurea, Hort. nama aurea, IJort.
This varicty forms a very neat, dwarf, round, dense, and compact bush, seldom exceeding three or fonr feet in height, with short, slender branchlets, which during the winter and spring become of a grolden yellow colour, particularly the points of the shoots.

It was raised in the nursery of Messis. Waterer and Godfrey; at Kuaphill.

Bhora Obiantalis vabibiata, Eudlicher, the variegated Clinese Arbur-Vites.
Syn. Biota Orientalis variegrata aurea, C'urriere. Thuja varicegata, Ilort.
, Oricntalis variegrata, Hort.
This is the grolden varlengted Chinese Arhor-Vitar, amel a very effective variety, from the l,anchlets being of a bright golden enlour and hright green, equally intermined all over the plant.

The Japanese call this kind "Furi-hiba " (two-coloured tree of life), and "Suri-hiba" (rariegated tree of life), on aecount of its having the yellow and green branchlets intemixed all ower the plant.

Biota Orfextahis argentea, Ifort, the silvery-white sariegated Artur- Vita.
Syn. 'lhuja argentea, Hort.

This is the silvery-variegnted Chinene Arbor-Vitee, and only difters from the preceding variety in the white colour of a portion of its hramelilets.
Biora Ombetalis abthrotaxohes', Morto, the Arthrotaxislike Arbor-\ital.
This singular and distinct variety forms : dense dwarf bush, with the branchlets curionsly contorted.

Biota Orientalis funiculata, Ifort, the cord-branehed Arbor-Vita:
Syn. Thuja funiculata, IIort.
" Biota funiculata, Mort.
This singular kind has slender, little divided, bright green branchlets, thinly furnished with small, open, and acute-pointed leaves. It is said to be a hybrid, raised in Franee, between Biotis penduli and Orientalis.

Biota Orientalis monstrosa, Carieiere, the monstrous
Chinese Arbor- Vitæ.
Syn. Thuja monstrosa, Mort.
" " Sibirici monstrosa, linight.
This variety is remarkable on account of its short gross branchlets, which are few in number, much contorted, and frequently four-sided, from the thickened obtuse-ovate (rarely acute) leaves.

Biota Ortentalis gracilis, Curviere, the Nopal Arbor-Titee. Syn. Biota Nepalensis, Eiullicher:
" $\quad$ freneloides, Belyian Gardens.
" $\quad$ gracilifolia, Knight.
" Thuja freneloides, Hort.
" $\quad$ " Nepalensis, Hort.

This variety differs from the species in being much slenderer; more compact and ereet in all its parts, and in having much smaller and more acute foliage. It is found on the momentains of Upper Nepal and other parts of Northern India, and is called by the natives "Majoo," which, according to Major Madden, is derived from the external resemblance of its fruit to the nutgall.

Biota Orientalis glated, Pince.
Syn. Thuja glauca, Mort.
This beautiful and very distinet variety differs from the
species in having all its leaves and branchlets covered with a tine glaucous powder, giving the plant quite a silvery appearance when in good health. It was raised by Messrs. Lucombe and Pince, of Exeter.

Biota Orifatalis Sifboidit, Eindlicher.

|  | Biota | Japonica, Sicbold. |
| :---: | :---: | :---: |
| , | " | Orientalis nana, Cumiere. |
| " | " | " compacta, Hort. |
| " | , | " incurvata, liniglet. |
| " |  | Cormama, Sirbold. |
| " | Thu | compacta, Moit. |
| " | " | nama, Mот't. |
| " | " | Orientalis compacta, Hort. |
| " | " | Japonica, Murt. |
|  |  | strictia, Hor . |

This kind is distinguished by its dwarf, eompact, conical head, and mumerous short hranchlets, which are of a bright green colour.

The Tapanese name for this variety is "Kus-jak " (peacock's tail), on aceumt of its close, fan-like branchlets and compact general outline, resembling the tail of a peacock. It is much cultivated in pots by the Japanese, on account of its dwarf, compact hatit.

Bhota Onimatafs fenensthsiala, Rollisson, the very elegant (hinese Arbor-Vitas. Syu. Thuj: clegantissima, Hoir.
A very elegant dwarf variety, obtained some years ago in the mursery of Messic. Rollisson, of Tooting, from a sport of the common Chinear Arbor-Vita. It has a much neater appearance and more erect hahit than the Biota Orientalis aurea, with :lll the tips or prints of the young shonts of a golden yellow colour during the summer and antumal months. It is the best of all the folden-tinter? varieties.

Biota Orientalis falcata, Lindley, the faleate sealed ArburVitæ.

Syn. Thuja faleata, Hort. , Biota Fortunei, Hor.

This kind is very upright and pyramidal in its growth, in consequence of which it is largely employed by the Japanese in forming hedges, for which its elose, compact habit renders it most suitable.

Mr. Fortune found it at Youkahana, in Japan, forming a dense, conieal bush, from 12 to 15 feet ligh, with great green cones, having the spine at the end of the seales, long, and curved backwards, like a sinall siekle.

Biota Orientalis Pekinensis, Gordon, the Peking ArborVita.

Leaves on the adult plants very small, seale-formed, closely imbrieated in four rows, orate-pointed, and furrowed on the back; the marginal ones lap over on both sides, the upper and under ones are flat, thickened at the points, glaucous green, and shining when young, but dull green when old. Branehes rather long and somewhat spreading. Bramelilets slender, flat, linear, and not very thickly disposed in two lateral rows. Cones small, globulirr, solitiry at the ends of the small branchlets, half an inch longr, and the sane in breadth, and of a fine glaucous violet colour when young. Scales mostly eight in number, with the outer ones large, flat, broadly ovate, and thickened near the conds, and the inner or central ones narrow, very much smaller, only a little longer, and trmente, with a short stout spine near the top. Sceds oral, wngless, and in twos at the base of the scales.

A splendid tree, from 50 to 60 feet ligh, with a stem two feet in diameter, found by Mr. Fortune on the Western Hills, near Pcking, in 1861.

## Biota Orientalis pyramidalis, Endlicher, the tall Chinese Arbor-Vitæ.

Syn. Biotin Orientalis excelsa, Hort.
excelsa, Hoit.
pyramidalis, Carriore.
Orientalis strictia, Loulon.
Thuja Orientalis cupressoiles, Cels.
This fine variety has a very tall, narrow, fastigiate head, very much resembling the upright C'ypress in shape, and quite as compact, with the folinge and branches more robust than those of the common form of the Chinese Arbor-Vita, and growing from 2() to 30 feet high. This variety must not be confonded with the Tartarian Arbor-Vite (Thuja tartarica).

Bota Orientanis thangularif, Mort, the triangularbranchletted Arbor-Vitie.

A curions, dwarf, compact variety; with the branchlets arranged in a triangular mamer, and not flat or fan-shaped, as is usually the case.

No. 2. Brota pmotla, lindlicher, the weeping Arbor-Vite.
Syn. Cupressus pendula, Thunberg.
.. ., patuln, Persoon.
" ." filiformis, Mort.
" ". peudulata, Ilort.
" Thuyja pendula, Lambert.
," ., filifurmis, Lodediges.
" " pemlulata, Hont.
.. "Orientalis flagelliformis, Jacques.
" Biota Orientalis pendula, Purlatore.
Leaves in opposite pirirs, very small, somewhat distant, scaleformed or ovate-lanceulate, spreading at the points, and loosely imbricated, decurrent and keeled on the back, much smaller; shorter, less pointed, ant more alosely inbricated at tho base
and towards the ends of the branchlets than along the intermediate parts, where they are more distant, pointed, longer, and spreading out at the points. Branches spreading, slender, rery long, and recurved; branchlets long, numerous, enllected in clusters at irregular distances along the branches, slender, thread-like, sometimes forked, loosely drooping, and distantly covered with small scale-like sharp-pointed leaves. Cones globose or ovatc-oblong ; half an inch long, erect, and produced in clusters of from three to five in number, near the cuds of the branches, and composed of from form to six seales. Scales externally convex, smooth, and terminating near the apex in a stout recurved hlunt point. Sceds ovate, slightly angular, and wingless.

A bush or small tree, with a straight stem and very long slender drooping branches, and branchlets growing 10 or 1.5 feet high and perfectly hardy, but suloject to vary in the appearance and size of its branchlets according to soil and situration. It is found growing spontaneous on the ITakone Momtains in Japan, but is cultivated universally all over Japan and the northern parts of China, on account of its graceful appearance. It is also said to be found in Tartary and Nepal, hut on very doubtful authority. It was also stated, some years ago, to be a liybrid mised by the Loddiges, between a Red Cedar and a Chinese Arhor-Viter, in their nursery at Hackney; and, singular as it may appear, the same was satd by some person in France, only that in this case the hybrid was raised between the common Cypress and Chinese Arbor-Tite. Dr. Siebold, however, laring diseovered the plant in a wild state in Japan, soon dispelled such statements.

The Japanese mames for this kind are "Ito-sugra" (the cordbranched evergreen), and "Fi-moro Hiba" (the slender or drooping tree of life). The (hinese call it "Hi-nn-lki" (the cord-branched or slender-formed slirub), and "Sisan" (common).

## SECTION II.-DoubtFur, Kinds.

No. 3. Biota Meldexars, Larson, the Freneh hybrid ArborVitie.

> Syn. Thuja liybrida, Mort.
> " " Meldensis, Firneh Ciurlens.

Leaves needle-shaped, decurrent, sharp-pminted, and in opposite distant paiss, somewhat spirally placed along the hamelnes, glaucous on both sides when young, but of a light shining ervern when ohd, quite stiff, and extended nutwards. Stem and loranches asceming, lateral ones lowee, spreading, and irregularly pheed along the main loranches. Brandhets very slender, mather dropping, and distantly clothed with sharp-pointed leaves. ('mnes said to be like thene of the commorn Arlenlites.

This plant is saill to be a hybrid between the Chinese ArhorViter and the eommon Red Cedar, and to have heen raised at Meaux in Franes. It, howerer, has very much the appeamee, when young, of an attemuaten mariety of the Virominan or leed Cedar, and is a very donhefol hymbl, having nut the least appearance of the Arbor-Tita in it.

It is quite hards:

## Gen. CALLITRIS. Ventenut.

Floucis, monorecons, or mate and femme on the same plant hut separate and terminal, the male catkins ghobular, female ones sulitars.

Cours, ghobular or somewhat fuur-sided, and eompereet oif four-valved wondy ceales. the alturnate pair much the smalle:t.
 the top, and four in number.

Sheds, no of two at the lave of ench seale (or valve, the larger pair of scales having two seeds each, the smaller pair
but one under each. Seeds winged on each side, slightly compressed, and somewhat threc-edged.

Secel-leares, from three to six, but mostly in fours.
Leruees, very small, scalc-formed, in alternate opposite pairs, close together at the base of the joints.

Name derived from "Kallos," beaty, from the elegant and regular appearanee of the jointed branchlets.

Callitris quadrivalvis, Ventenat, the jointed Arbor-Vitie. Syn. Thuja articulata, Wruhlenberg.
, Frenella Fontanesii, Mirbel.
Leaves very small, scale-formed, in alternate opposite pairs, elose together at the base of the distant joints, and facing four suceessive ways, those on the margins clasping both sides, those on the upper and lower sides flat, witl a terminal point and small transparent gland near their extremity ; those on the adult branches are very much smaller and decurrent. Branches spread out horizontal, with numerous lateral ones, regularly dividing again into flattened, slender jointed, shining, smonth, pale green branchlets. Branchlets numerous, regularly branching, quite flat, glabrous, sometimes glauceseent, distinctly jointed and straight. Cones globular, or somewhat quadrangular, and consisting of fonr seales or valves, in opposite pairs, regularly truncate on the summit, slightly concave and obtuse ; the two opposite ones mueh longer and seldom convex, but terminating in a point at the extremity, and containing one or two double-winged seeds under each.

A large tree, diminishing into a small bush, aceording to elevation and soil; found on the mountains of Barbary in rocky situations, and on Mount Atlas, in Northern Africa.

Its Barbary mame is " Alerce."
It is not hardy, execpt in the milder parts of Engliund.

## Gen. CEDRUS. Link: The Cedars.

Flouers, moncecious, or male and female on the same plant, but separate ; the male catkins solitary, cylindrical, erect, and terminal, female ones somewhat nval and obtnie, solitary, rery rarely in twins, and erect.

Comes, oval, oltuse at the embs, quito smonth, erect, and on the npper side of the branches.

Siceles, very closely placed, romded on the outer margins, quite thin at the erlges, leathery, smooth, and more or lees deciluous.

Serels, in twos under ench sale, with a soft tegumental covering, full of thrpentine, more or los angular, and furnished with a large persistent membmaceous wing.

Sondences, mostly nine in number:
J.ecere, needle-shaped, nomewhat four-sided, stiff, persistent, and diopposed either in bmelles or solitary:
 anon, the Nortls of Surlia, or on the Barbary and Athas Momtains in Northern Ifrica.

The word Cidni' (Kedros of the Cireeks) was not reatricted by the ancients to the Cedar of Lebanon, but probably derived from the Arabic "Kelr," worth or value, or its derivative "Kedrat," strength or power, in allusion to the value of the wood. The Hebrew and Arabic names for the Cedar are "Ama" or "Axz," and that of the Romans "Arar," all from the Ambic root "Arazal;" "He was firm and stable, with ronts deeply fixen in the erround" (foulizs:). Other writers derive the mank from "Katu," to burs, and "Drio," to, sweat or distil, a kimb of incerne being obtained from the split wowl, and burnt is it subatitute for it in the East; Pliny also deacribes the process of making "Cedria," from the cedar-wood, by distillation, and affirme its ereat value as a remedy for tonth-ache, for which cure our modern creosute is therefore lut an old remedy revived. Again, others derive the name from Culion, a brouk
in Judrea, the Cedar of Lebanon being formerly found plentiful along its banks.

No. 1. Cedrus Atlantrid, Manefti, the Mount Atlas Cedar.
Syn. Cedrus Africana, Coorton.
" $\quad$ argentea, Louldon.
" $\quad$ elegnans, Knight.
" Abies Atlantien, Linulley.
" Pinus Atlantien, Enull icher.
" " Cedrus Atlantica, Perlatore.

Leaves in tufts, or singly on the young shoots, stiff, needleshaperl, eylindrical, or Hattencel on the upper side, sharppointed, and straight; evergreen, with a silvery appearance, and shorter and denser than those of the common Cednr of Lebanon, very irregular in length in the fasciles, varying from half to three-fourths of an inch in length, longer on the leading shoots, and with a furrow rumning along the whole length of the leaf. Branches rather slender, less rigid, and covered with scattered bundles of leaves, mostly opposite, but sometimes very irregularly placed. Cones ovate, flattened, or rather depressed at the ends, from two and a half to three inches long, ereet on the upper side of the external branches, of a shining light brown colour, and full of resinous matter. Seales elosely pressing against each other, smooth, broad, trumeate and blunt on the upper part, of a leathery texture, ant thin on the edges. Seeds of an irregular or angular shape, soft, and with a thin transparent wing one inch or more long.

A noble tree, like the Cedar of Lebanon, growing from 80 to 100 fect high, with horizontal branches and a tabular-shaped head when old, but somewhat pyramidal and ojen in the head when young.

It is found on the lighest mountains in Algenia, and particularly on the famous Atlas range in Nortlicrn $\Lambda$ frica, at an clevation of from 7000 to 8000 feet.

The Moment Atlas Cedar is quite hardy, and more rappid in growth than the common Cediar of Lebanon.

## No. -. Cedrles Deodara, Lourtor, the Deotar or Indian Cedar.

Syn. Abies Deolora, Lindley. C'edrus Indica, De Clrembir. , Pinus Deodara, Rorl, 1 rylh.

Leaves evergreen, somewhat fommsided, neerlle-shaperl, acme pointed, wery glaucus, and from one th two inches lumg, flane on the prineipal and lateral lmanches leing endlected in tufts or close buntles of from so to 60 in number, on very thont and ummerous branchlets, while then on the young shouts are solitary, alternate and sattered ahonerg the twigs, and when young very ghacous, lut getting much greener as they become ohder. Branches sery stout, irregularly phaced aloner the stem, enuch dividen, hosizontal, and 'quite flat, the lower ones heing more or less deflected and clase to the ground, hat the genemeal aspect of the thee when young is drompine and exceedingly gracefol, but as it grows uhlen and large the hanches anomme a stiff, flat, and solemn appearance, like that of the Cenler of Lebanon. It flowers in september, amd the seth- are ripe in October or November of the following y yar, on in about thirteen months. The mate eatkins, though solitary, an very mumerous, ereet, two or three inches long, at first oval, lut grarlually leceme ertindrical: the majority of thene and the female thwers are produced on separate trees, but a considerable number of trees abo produce buth mate and female flowers on the same individual. In about a month aftere the Deotar has \{towered, tho joung cones, coverul with a bluish bloom, atplear of a cylindrical firm, without any foot-stalks, and solitary on the top of the little thits of leaves. ('ones erect, solitary on the upere side of the stout top bramehes, ovate, obtuse, or nearly cylindrical, from three to five inches long, and two and a half inches wide, that, and slightly depresseal at both ends, :url very much resembling those of the common Cedar of Lebatom, of a rusty brown colour, and when the seeds are rije, break up and fall to piecees, shedding loth seales and needy on
the ground. Scales firmly and closely imbricated when young, but deciduous when matured; broad, thin, smooth, quite entire on the margins, of a rusty-brown colour, and full of resinous matter on the outside, in the shape of numerons transparent tears. Sceds wedge-shaped, soft, and full of turpentine; wings, obovate and membranaccous.

In the Himalayas the Deodar occupies a great vertical belt or range, flourishing from about 5500 to 10,000 feet of clevation, mixed up for the first 1.500 feet with Pinus longifolia, while for the last 3000 or 4000 feet of clevation it accompanies Abics Smithiana and Picea Pindrow. It is found on, all the higher mountains from Nepal up to Cashmere; and Dr. Griffith describes it as occurring in vast forests and of great size towards Kaffristan, where it is called "Nokhtur," and flourishes at an clevation of from 5000 to 10,000 feet above the sca. But to see the Deodar in its greatest perfection, one must visit the snowy ranges and lofty mountains of the interior, far from the influence of the plains, and where, for newly half the year; it is enveloped in snow; there, its dimensions become gigantic. In Lower Kamaon there is an extensive forest of very fine trees from 20 to 27 feet in girth; and Major Madden measured one tree in 1830 which measured $36 \frac{1}{2}$ feet in circunference fully tive feet from the ground; and on a subsequent journey he saw several on the northern declivity of the Booran and Roopin Passes not under 30 feet in ginth, and from 150 to 200 feet ligh. The timber has a peculiar and strong odour, so that no insects will touch it; the grain is open, straight, not liable to warp, even if in thin boards, and exposed to the weather; and may be considered the best wood of its class in the world; but like all other woods of that class, if cut young it will soou decay when in contact with damp; but after its timber the most valuable product is its turpentine, which when rubbed on any other kind of timber, reuders it less liable to decay and the ravages of vermin.

The Deodar Cedar is called "Kelon," "Kolan," and "Kolain," in Gurhwal, all Sanscrit variations for Cedar, and its resinous
products. In Kunawur it is known as the "Kelmung" by the Arian population, and about Sinalia as that of "Keloo," "Kelon," and "Kcoulce," all vernacular terms for resin or its extracts. The Hindostanee names "Devadaru," "Deodara," and "Dcwar," are all derived from "Deva" or "Derva" (deity), and "darn" (timber or tree), and rendered by Sanserit writers its "Tree of Cod," "Spirit-Bearer," "Divine-tree," aml "Lord of Cedars." In Kafiriston the tree is called "Nokhtur," on atcoment of its prickly or pungent leaves: and the people of Nrpal, Cashmere, and Persia apply the samte mames and terms ats those used by the hill people in India, ant hold it in equal veneration. It has not yet been found in at natural state cither in Lastern Nepal or Siklum, although thes gigantic sons of snow fringe the hare rocks and fis their routs where there appears to be very little soil, on the lofty pases from Nepal to Cashmere: and, according to Captain l'emlerton (in his "Piprort on the Eiastern Frentier"), the most sunthern pint to which the Dendar has yet been traced is the summit of the loty ranges immediately west of Mhmepore, an internting region, which, with the Siuffo Mountains, south-eant of Asam, carry the zone of perpetmal snow farthest sonth in India. The Deodar ala) grows to extratordinary dimensions on atl the higher mountains thronghout the western Hinalay as, and occurs in vast forests in Kumawur, Kamann, Fonloo, Minsoorie, and on the Chmmbra range in Kangara, at elevations varying from (i000) to $12,0(0) 0$ feet. At Rashulah, in Koolon, a furest exists with treas from 18 to $2 f$ feet in girth, at four feet from the gromd ; and aceording tu Dr: Jimeson, of two trees measured by him near Mulari, in Cimhwal, at an elevation of 11,000 fect, one girthed $2 f$ feet at three feet from the ground, and the other 27 feet; lut, as a general rule, the finest trees always are found growing on the north side of barren montains, in thin, poor soil, formerl from the decomposition of granite, gneiss, mica, or clay-slate. ('aptain Johnson, in his "Excmision to the Sources of the Jumna," states that the peaks on the northern side of the Boorumg leass were completely hididen by forests
of gigantie Deodars, some of which measured 333 feet in circumference, and were from 60 to 70 feet without a branch. Here, too, the character of the timber was different firom that grown in southern aspeets and rieh soil, it being nore compact, liarder; and of a deeper red, owing to its slow growth. The boat-builders along the Jhelum River distinguish its timber under the appellation of "Peliptur," and consider it the most valuable of all for its durability, both for naval and arehitectural purposes, the wood being compact, rather close-grained, longfibred, highly resinnus, deliciously perfumed, and lasting for a great number of years, even though much exposed to the elements, being hut little affected by water; as boats built of its timber will last for twenty or thirty years, while those built of the "Cheer" (Pinus longifolia) only last six or seven.

It was first introduced into England in the year 182.2, by the Honourable W. Leslic Melville, and produced its cones for the first time in Europe in 1858, at Bieton, the residence of the Baroness Rolle, in Devonshire.

Cedrus Deodara viridis, Hort., the green-leaved Deodar. Syn. Cedrus Deodara tenuifolia, Knight.
A very distinct variety, on account of its bright grass-s-green colour and slender habit. It is entirely free from any glaucous appearance, evell when young.

Cedrus Deodara roblesta, Mort, the robust Dendiu:
Syır. Cedrus Deodara gigantea, línight.
A robust-growing variety, with a very glaucous ippearance, and much larger in all its parts.

## Cedrus Deodara crassifolia, Ifort.

This varicty differs from the preceding one in laving much thicker and shorter leaves, and much shorter and more compact branches, which are less pendulous.

## Cemres Deodara melecta，（itiphs，the Erect－growing Deodar Cedar．

Syn．Cedrus Dcodara verticillata glauca，Cripps．
This is a finc，erect growing variety，with the leaves of a much more silvery lue than that of the common Deodar．

It is in the nursery of Mr：（＇rilps，at Tumbridere Wells，and the handsomest of all the silver tinterl varieties．

No．3．Cfidmus Lirant，Barretier，the Cedar of Lebanon．

> Syn. Pinus Cedrus, Limnous: " Alies C'elrus, Poniret. " Laris Cedrus, Miller. " $\quad$ patula, Sullisury.
> " Orientalis, Touruefort. " Cedrus Phemicea, Remedme.

Leaves simple，fery dense，in alternate tufts of about 30 in number，evergreen，rigit，partially four－sided，or cylindrical， tapering th the point，straight，whe inch ling，sharp－pointed， and of a dark grass－green colour．Branches horizontal，with the branchlets disposed in a flat，fin－like manner on the branches，very mumerous，and thiekly set with leaves．Cones recet，ovate，flattemed at the ends，and depressed，four or five inches long，and two inches and a half wide，with rather a long fuot－stalk，of a grayi－h－hrown colour，and remaining firmly attached for years to the branches．The cones require two years th ripen，and exule a large quantity of resinous matter while growing．sicales thit，and firmly prossed against each other，one inch and a half broad，obtuse，and truncated at the summit，very thin，leathery，slightly denticulated at the edges， of a reddisli colour，and shining on the flat part．Sceds some－ what triangular，soft，and surmomed by a broad and very thin membranaceons wing more than an inch long．

A noble tree，with wide－spreading horizontal branches，grow－ ing from 60 to 8() feet high，and 30 feet in circumference，with a flat，tabular top when old．

It is found on Blount Lebanon, and probably over the whole of that group of mountains which is situate between Damascus and Tripoli, in Syria, and which ineludes the Libanus and Mounts Amanus and Trurus, of antiquity.

There are the following varieties :-

> Cemrt's Libani argentea, Loudon.
> Syti. Cedrus Libani glauca, Ilort.

This beautiful variety las the leaves of a silvery or glaucous hue on both sides, and contrast well with the more commou form with green foliage.

## Cedrus Libani nana, Loudon.

A very dwarf varicty, seldom growing more than two or three feet high, with very short shoots and smaller leaves than the species.

## Cedrus Libani pendula, Ǩnight.

This variety lias slenderer and some what pendulous branehes.

## Gen. CEPHALOTAXUS. Siebold. The Clusterflowered Yews.

Flowers, diœcious, or male and female on different plants, pedmeulate, and in globular heads.

Fruit, drupaceous, or like the common plum, fleshy outside, and two or three in a head.

Seecls, solitary, nut-like, with a bony or woody shell, and enclosed in the fleshy disk.

Leaves, one-nerved, linear, alteruate, and in two rows.
Seed-lecures, in twos.
Nume, derived from "Kephale," a head, and "taxis," arrangement, flowers and fruit growing in close globular heads.

All evergreen trees, found in China and Japan.

No. 1. Cephalotaxles drupacea, Siebold, the Drupaceous or Plum-fruited Cephalotaxus.
Syn. Cephalotaxus Fortunci fommina, Camienre.
coriacea, Ǩnight.
" Podocarpus drupacea, Iom
Taxus haceata, Thumbei\%. coriacea, Mort.
" " c
" ". Japonica, Hwoker, not Lodeliges.
Leaves strictly arsanged in two rows laterally along the branches, regularly opmosite, rather close, leathery, stiff, linear, shightly curved or falcate, bhontly tapering to a short, acute, spiny point at the apex, and on very short foot-stalks, more or less twisted at the hase, from three-quarters to one inch and a quarter longs and one and a half to twon lines broad near the base, of a deep glossy green colom above, with a namew, elerated nerve along the middle, and with two l,road glatucous: White hauls along the under side, hot with the mid rib and mawgins of a bright glossy green lelow. Branches in horizontal whorls along the stem, upper ones sometimes a little ascending, quite straight, very spreading, flat, stifl, and rather shon't, lateral ones in two rows, quite flat, short, rather numerous, ind either opposite on alternately placed at irregular distinees along the primipal branches. Branchlets very short, rather stiff, wery flat, and spread out laterally on each side. Hude small, and covered with persistent, imbricater, acutepointed, hore or less extended scales. Male flowers in globular heads provided with bracts, "ach catkin being oval and rather peinted. Fruit hupaceous, or plum-like, regularly elliptic, and from three-rgarters to one inch long, and three-quarters of an inch hroad. Secels solitary, with a thin, hard, bony shell, envered with a thin fleshy substance, and purplish skin when ripe. Seed-leaves in twos, and rather short.

A fine, compact, evergreen tree, growing from 8.5 to 40 feet high, found in China and Japan, koth cultivated and in the wild state, particularly on the mountains of Nagasaki, at an
elevation of 2000 feet, and in the north of China, in the province of Yang-Sin. The Japanese name is "Kaja."

It is quite hardy.
No. 2. Cerfiafotaxus Fortunei, Ifoolici, Fortune's Ceplalotaxus. Syn. C'ephalotaxus filiformis, Ḱnight.

Fortunci pendula, Cumierce. mas, Iloit.
Leaves on the lateral bramehes and branchlets strietly arranged in two rows; they are long, linear-lanecolate, regularly tapering to in acute point, quite straight, smooth, flat, mostly opposite, but sometimes slightly alternate, somewhat distant apart, and nearly sessile, or on very sliort, more or less twisted foot-stalks; those on the principal branches and on the young plants are mostly seattered altermately and mueh the longest, of a deep glossy green, with a narrow, acute rib along the middle on the upper surface, and of a glaueous white below, except the mid-rib and margins, which are of a bright glossy green eolour. Branches in horizontal whorls round the stem, long, slender, spreading, and rather pendent towards the ends; lateral ones and branchlets arranged laterally in two rows, frequently in opposite pairs, but sometimes irregularly and distantly seattered, very sleuder, long, and more or less filiform. Buds very small, and covered with persistent, long, acute, glossy, imbrieated seales, extended at the points, and whiel remain at the base of each successive growth for some years afterwarls in a withered state. Male flowers in ghobular heads, axiliary, and on short foot-stalks. Fruit drupaceous, regularly elliptic, tapering to both ends, and frequently furnished with a small point, on the apex, from one inch to one and a quarter long, and nearly threc-quarters of an inch broad. Secds solitary in each fruit, and covered with a hard, bony shell, rather thin and brittle, and enveloped in a thin Heshy substance, and purplish skin when ripe.

A fine evergreen tree, growing from 40 to 60 feet ligh, with
long, slender, drooping branches; but in this country it does not readily make a leader, and is inclined to be bushy. Mr. Fortune found it in the north of China, partieularly in the province of Yang-Sin.

It is quite hardy.
No. 3. Cephalutaxüs pfounculata, Síhbold, the Long-stalked Cephalotaxus.

## syn. Taxus Harringtonia, Loulon.

$$
\begin{array}{ll}
\text { " } \quad \text { Innkaja, } K \text { hightht. } \\
" & \text { Sinensis, Knight. }
\end{array}
$$

Leaves in two rows, mostly opposite and Hat on the branehlets, but somewhat spiral and alternate on the leading shoots and principal branches, linear, a little cinven, very closely set on the shoots, thick, leathery, revolute, aurl without or on very short foot-stalls, from one aml a half to two inches and a half long, and one and a half to two lines broad, of a bright glossy green above, and furmished with an elerated straight nerve, and two broad glaucous white hands on the muder one, ternimating in an acute or ohtuse spiny point. Branehes numerous, sprealing, and mostly in whorls. Branchlets in two rows, horizontal, and mostly opposite. Bude furnished with persistent imbrieated seales. Male flowers collected in globular heads, on peeluncules furnished with bracts, eaeh eatkin being oval and much shorter than the bracteas, female ones axiliary and disposed in heads on long, sonewhat fur-comered froitstalks. Fruit, two or three in a eluse head, drupaceons, or each encloned in it fleshy covering, like the fruit of the common phan. Seeds solitary in caeh fruit, ercet, and with a smooth hony shell, which is hard and thin. Seed-leaves in twos, short, and rounded at the points.

A handsome, small evergreen tree, growing from 20 to 25 feet high, with numerous spreading branehes, mostly in whorls round the stem; found abundantly in Japan, eultivated in grudens mider the name of" "Imkaja " (not wild).

It is quite hardy.

No. 4. Cephalotaxus umbraculifera, Siebold, the Shadeaffording Cephalotaxus.
Syn. Torreya grandis, Fortune.
" Cephalotaxus grandis, Mort.
,, Caryotaxus grandis, Ifort.
Leaves in two rows, quite flat, closely placed along the shoots, very rigid, linear-laneeolate, rather short, and somewhat faleate, from three-quarters to an ineh long, and one line and a half broad near the base, of a light glossy green above, but much paler below, with two narrow grayish lines, and almost sessile, or on very short spirally twisted foot-stalks, more or less opposite, and furnisherl with a long aeute spiny point at the apex. Branches on the stem in whorls, spread out horizontally and extended. Branchlets arranged in two rows laterally, flat, and spreading. Male flowers in globular heads. Fruit drupaeeous, oval pointed, fleslyy, green, and about the size of a small walnut. Seeds solitary, egg-shaped, tapering mueh to the apex, one ineh long, and three-quarters of an inch in diameter, with a hard, thiek, woody shell, more or less fluterl on the outside. Seed-leaves in twos, short, and rather rounded at the ends.

A fine evergreen tree, from 60 to 80 feet high, with horizontal, mueh extended branelies, found on the Che-Kiang mountains in the north of China, and on the mountains of Japan.

Gen. CHAMECYPARIS. Spach. The White Cedar.

Flowers, monœeeons, or male and female on the same plant, but separate and terminal. Male eatkins cylindrieal, femalo ones globular.

Cones, ligneous, very small, globular or oblong, numerous, and covered with a glaueous bloom.

Scales, mostly seven in nmmber, oblong or rounded, shieldshaped, and in alternate opposite pairs.

Secels, convex, a little flattened on one side, hard shelled, in sunken grooves, two at the base of each scale, and cither wingless or very slightly furnished with rudimentary ones.

Lecues, scale-formed, in opposite pains, four rowed, with a sunken groove or fland on the back, glaneons and persistent.

Sect-leceres, in twos.
Nrome, derived from "Chamse," ground, and "Cyparis," the Cypress-the ground or swamp ('yluess.

An evergreen tree, foum in North America.

No. 1. Chamicypiris sphamoddea, spucech, the White Cedar.
Syn. Cnpressus thyoide-, Linumu*.
nana-mariana, Plulinet.
Thuja spharoidea, Iloit.
sphernidalis, Richard.
Leaves in foitr rows, regularly imbricated, ovate-pointed, and in opposite pairs, seldom spreuling at the points, but always in straight lines, of a bright crlaucons green, and with a large tramsparent gland on the back rib. Stem bushy, branching to the ground, particularly on young plants. Branches horizontal, somewhat pendulous, and densely covered at the points, with mumerons small branchlets. Branchlets crowded, compressed, long, regularly forked, feernently bent downwards, and covered with small seale-formed leaves. Cones very sinall, grobular, mumerons, clustered torether; and ahont the size of a small pea, green when young, hat of a glateons hue or brown colour when ripe. Scales mustly seven in nmmber, shield-shaped, four or tive-sided, in opposite altemate pairs, with the odd terminal one the largest, each having a slightly elevated, broad, flat point in the centre, and covering two small round slightly winged seeds at their base in sunken grooves.

A tall evergreen tree, growing 70 or 80 feet high, and three feet in diancter.

It is only found growing in a wild stite, in the wet groumls of the maritime districts of New Jersey, Maryland, and Virginia, where it nearly fills all the extensive marshes along the coast. It also oceurs in great abundance in the Dismal Swamps near Norfolk, in the State of Virginiz, alld is found to extend as far as Carolina, but always in swampy places. It is perfeetly hardy, and has the following varieties :-

Chamacyparis spharohea qlaugh, Eindlichor:
Syn. Chamaceyparis Kewensis, Mort.
" Cupressus spheroidea pendula, Hort.
" " thyoides Kewensis, Hort.
" ". spheroidea Kewensis, Knight.
" Retinospora deeussata, Ifort.
This variety differs from the speeies in being more eompact, denser, and in laving the branchlets and leaves of a silvery glaucous colour: It is a very beautiful variety.

Chamecyparis sifheromed atroviress, Knight.
Syn, Chamæcyparis atrovirens, Hort.
" Cupressus thyoides atrovirens, Laveson.
This differs in laving its branehlets and foliage of a bright shining green, with little or no traees of the glaveous hue of the species.

## Chamectyparis spheroidea variegata, Eindlicher:

Syn. Cupressus thyoides variegata, Loudon. variegata, Hort.
" Thuja sphecroidea variegata, Hort.
This variety differs in having some of its leaves and small branchlets of a golden yellow colour intermixed with the green ones ; a desirable kind.

Chamecyparis spineroidea nana, Éndlicher:
Syn. Cuprossus thyoides nama, Loudon.

## Syn. Cupressus nana, Hort.

Thuja sphaeroidea nana, Mort.
A very distinct, small, compact little bush, of diminutive size, smaller in all its parts, and quite glaucous.

## Gen. (RRYPTOMERIA. Don.

Flows is, moncecions, or male and female on the same plant, but separate; the male catkin- numerous, somewhat oblong, and eolleeted in chasters at the extrenities of the branchlets; the fermale ones montly solitary, or two or three torether, without foot-stalks, spherical and terminal.

Conses, ghoular, werely; and cither singly or in clnters.
secrles, wedge-shaped, numerous, loose, and with mogh-fringed edges.

Seers, from three to five moler each seale, obovate or angnlarly frpresised, and covereal with a crustaceons tegnment, prolonged on each side into a regular momhame, cut sloping at hoth extremities.

Sirel-facter, from two to four in number, but mostly in threes.

Locars, alternate, in five rows, sickle-shaped, irregularly fonrsided, withont any foot-stalks, but rmming downwards at the liase, acute-pointed, spreading, and persistent.

Nume, derived from " Kruptus," hidden, and "Mcris," a pait.
All large evergreen trees, found in the north of China and Japan.

No. 1. Cryptomerad Elegass, Veitch, the Elegant Japan Cedar.
Sym. Cryptomeria Japonica clegrans, ILort.
" " gracilis, Mort.
" " Japonien clongata, Regel.

Leaves lincar, narrow, sickle-shaped, rigid, acute-pointed, decurrent at the base, and somewhat distantly placed spirally all round the branehlets, and when fully grown bent backwards; they are slightly channelled on both surfaces, quite smooth, and of a cincrons green colour in summer, but change to a rieh bronzy here in the antunin and winter, and from half to three quarters of an inch long, and about half a line wide near the basc. Branches numerous, horizontal, spreading, somewhat flat, and irregularly placed along the stem; lateral branches and branchlets alternate, curved downwards at the points, and in winter of a reddish-brown colour. Cones very similar to those of Cryptomeria Japoniea, but the seales are in general longer and mueh thinner.

A robust pyramidal tree, with a straight stem, from 60 to 100 feet high, found on the Island of Nippon, in Japan.

This trec, bears a considerable resemblanee to the Arancaria Cunninghamii, is perfectly hardy, and thrives best when planted in a rather moist situation.

No. 2. Cryptomeria Japonica, Don, the Japan Cedar.

> Syn. Cupressus Japoniea, Thunberg. " Taxodium Japonicum, Brongniurt. " Cipressus Cheusanensis, Plukenet.

Leaves five-rowed, without any foot-stalks, short-pointed, very elose together, incurved or siekle-shaped, eompressed on the sides; of a four-sided, rhomboidal shape, running downwards on the under side, and with a sharp, projecting mid rib, from a quarter to threc-quarters of an inch in length, bright green, and quite-smooth. Branches erect or horizontal, spreading; lateral ones dividing alternately into numerous branchlets, thiekly elothed with leaves. Cones about the size of a large eherry, mostly standing singly, but sometimes in eluster's on the extremities of the branchlets, and without any footstalks, mostly ercet, and of a globular shape, but not very compact or solid. Seales numerous, rather loose, of a dull brownish-
red colomr, and with rough fringed edges. Male flowers on the same tree, intermixed with the young cones, at the extremities of the branchlets, and of a sinall oval or oblong shape, in large lonse chnsters. Seeds ripen in September and October.

A tall pyramidal tree, with a straight stem, from tio to 100 feet high, and four or five feet in dianeter, with a brownishred bark. Woon compact, rery white, soft, and easily worked, and mueh used for varions purperes, particularly for calbinct work in Japan.

It is found plentifully about Shanghee and other northem parts of Chima, in the form of avenues and groves, and where no doubt it has been introdneed from Japan. Professor Thumberg, who in the year 178 \& first publi-hed ann account of this tree muder the name of Japan Cedar, states that it is foumd both spontemeons aml phanted (1n the momatains of Niugsaki, and elsewhere on the southerin mountanous districts of Japma, generally growing in damp soils on a lrasaltic substratum.

Dr. Siebold, in his "Flom Taponice," crll it a majestic tree, well deserving the name of Cedar; that it grows from (60) to lo() feet high, and fom or five feet in diameter, with a prya-midal-shaped head, and rather erect or harizontal branches; that it vecurs in great abundance on the three great isles of Iapan, and most probably on the sualler ones, and that a tenth part of the forests which eover the skirts of the momatains between 500 and 1200 feet of elevation is composed of this tree. It was first introduced into England by Fortune, in $184 t$

The Chinese name for this tree is "San-Suga" (common "verereen), and the Japanene "Suga" (evergreen), or "Sugal-Mat-" (evererreell fir); and a slight variety of it is sometime. called "araucarivides" in the murseries, on accomet of its supposed resemblanee to Araucaria Cumninghamii.

Cryptomeria Japonica nana, Fortume, the Dwarf Japan Cedar.
Syn. Cryptomeria Japonica pygmea, Loudon.

$$
\text { " } \quad \text { nana, Lindley. }
$$

This varicty seldom attains a greater height than two or three fect, and in habit very much resembles a small Juniper bush, in its stunted habit, forming quite a dense bush, with twisted or erect leaves, recurved at the points.

A dense little bush, called "Fi-Suga " (dwarf evergreen) by the Chinese.

> Cryptomeria Japonica Lobbil, Hort. Syn. Cryptomeria viridis, Hort.
> " Japonica viridis, Hort.

This varicty differs in mothing from the original, except in its being of a much brighter green colour, and of more compact growth. It is said to have been introduced from the Dutch Botanic Gardens at Batavia, by one of the Lobbs.

> Cryptomeria Japonica variegata, Hort.

This varicty is beautifully varicgated with pale yellow, and, when in grood condition, a very attractive kind.

## Gen. CUNNINGHAMIA. R. Broum.

Flowers, monœecious, or male and female on the same plant, but separate and terminal.

Cones, small, ovate or globular, and ligneous.
Scales, acute-pointed, and without bracteas.
Seeds, three under each seale.
Lecues, lanceolate, rigid, and flat.
Seed-leaves, in twos.
Named by Dr. Brown in compliment to Mr. James Cunningham, who first discovered the plant in China.

A small tree, native of China and Japan.

## Cunminghamid Sinexsis, $R$. Brown, the Chinese Cunninghamia.

Syn. Cunninghamia lanceolate, $\mathrm{V}^{\prime}$ an Houtte.
, Belis jaculifolia, Súlisbury. lanceolata, Sureet. Ahies lanceolata, Desfontcines. Pinus lanceolati, Landert. Araucaria lanceolata, How .
Leaves lancenlate, quite entire, flat, sessile, spreading, rigid, pmigent, bent downwards, one inch and a half long, and dispored all round the hamches and stoms, exeept on the old lateral ones, where they are arranged in two rows. Branches genemally in whorls, lower cines horizontal, but thase near the top ascendiug. Branchlets oppositr, in two rows, and spreading. Male catkins terminal in clusters, eylindrical, and near an inch long. Conts ghlular, three or fone together, lut sometimes solitary, sessile, drooping, sumoth, and about the size of a walmut. scales ovate, tapering to a sharp point, leathery, sharply denticulated on the margins, thin, and free at the points.

A middle-sizal evergreen tree, growing from 30 to 40 feet high, and very much resembling the Brazilian Araucaria in appearance. It is found plentiful in the sonthern parts of (hina, and cultivated in Japan.

The Japanese name for this tree is, "Liu-kiu-momi" (the wild or native fir of China), and the Chinese call it "Sam-Shu" (common evergreen), from its abundance all over China.

## Cumpinghamid Sinersis glauca, Ifort.

This variety differs from the species in having the leaves on the branchlets of a glaucous colour.

## Gien. CUPRESSUS. Tournefort. The true Cypresses.

Flowers, monoceious, or male and female on the same plant, hut separate ; male eatkins eylindrical and numerous, female ones roundish, and either in clusters or solitary.

C'ones, somewhat globular, and composed of angular, irregu-larly-shaped, woody scales, externally shield-shaped.

Scelce, from six to ten in number, irregularly four or fivesided, raised in the centre, and terminating in a more or less curved point.

S'eeds, numerous, inserted on the upper interior surface of the scales, angularly compressed or ovate, with a bony covering, extending into a membranaceous wing at the margins.

Secel-leares, in twos or threes, rarely in fours, hut mostly in twos.

In the true Cupressus the leaves along the branchlets are mere scales, elosely imbricated, or tiled ower each other, and generally in four rows, with the braneles always seattered along the stem, and the buds not sealy. Cones, more or less rounded, and composed of from six to ten peltate woody scales, furnished with a projecting point or boss in the centre, and which seales, when the seeds are ripe, become dry and separate. All the species exude resin, but afford no turpentine.

The name C'upressus, aceording to some writers, is derived from the first species having been found plentiful on the Isle of Cyprus ; but as the Cypress appears to have been known to the ancient Hebrews, Greeks, and Phœenicians, it is much more probable that the converse is the true statement, and that the island was named from the tree being found plentiful upon it; while aecording to other writers the nane is derived from "Cyparissus," a beautiful youth of the Island of Ceos, who, according to tradition, was changed into a Cypress.

All large bushes or trees, found in the south of Europe, China, Califormia, Mexico, Cuatemala, North Ameriea, and the East Indies.

No. 1. Cupresse's attexuata, Goorlon, the attenuated-branchletted Cypress.

Syn. Cupressils nivea, Loub. Bourgeauii, Inot

Leaves on the young plants distant, spreading, slender, very small, straight, and of a light glaneous green colomr, broackest at the base, and tapering to rather a hant peint ; those on the laterals much shorter; thicker, and cluser together, while those on the adult plants are seale-formed, very short, closely inbricated, and bluntly oval, with a sunken oblong gland on the hack, and very glaueous. Branches horizontal, very distant, long, slender, and little forked, lateral ones alternate, very slender, distant, and spread ont sonewhat in two rows. Branchlets rery short, thin, motly oppesite, and very slender, somewhat fom-sided, and loonely imbricaterl. Cones small, terminal, on short scaly foot-stalks, and in large dnsters, on the upper Latanches. Scales irregularly four or five-sider, mostly six in mumher, shiehl-shaped, slightly clevated in the centre, and terminating in as short, hlunt pint, nometimes curved untwards. Seeds rather small, mumerous, and surrounded with a dull brown wing or margin, cut sloping at top and bottom.

A fine glaucons hush, growing from six to ten feet high, with mumerus straight, small, slender spray, covered with olitusupuinted leaves, more or less spreading at their points aut rather distantly placed, especially towards the base of the bramehlets.

This kime was fomd growing in moist situations, along the lanks of momtain streams, in the Shasta country; in Northern (Gaforna, and in the Oregon territory, hy Lobl.

No. ㄹ. Cluressés Bamourdana, Lemoine, Balfour's Cypress.
Of thi- kind very little is at present known, exeept that it has slemder, dronping linaches, amb closely imbricated, thinly arranged, light, glaucous, green lranchlets, and somewhat re-
sembles Cupressus Corneyana, in habit of growth and general appearanee.

It has proved hardy in Mr. Cripls's Nursery, at Tunbridge Wells.

## No. 3. Cupressus Beathami, Endlicher, Mr. Bentham's Cypress.

Syn. Cupressus thurifera, Bentham.
Leaves imbricated, opposite, ovate-pointed, and mostly free towards the points, keel-shaped at the baek, with a hollow gland in the centre, and, like the lranchlets, dark green or very slightly glaucous when young. Branches long, round, spreading, dense, and flat. Branchlets four-sided, slender, and mostly curved and forked. Cones globular, five lines in diameter, produced in great abundance on the outer parts of the branches, and consisting of from eight to ten scales. Seales wrinkled, and shaped like that of an ancient shield, with the onter face convex, terminated with a long prickle in the centre. Seeds numerous, below cach seale, and more or less winged.

A tall tree, with an ample, dense head, growing from 50 to 60 feet high, on the mountains of Mexico, at an clevation of fiom 5000 to 7000 feet, partieularly on the mountains of Angangueo and Tlalpuxahua.

It was first diseovered by Mr. Hartweg, and deseribed by Mr. Benthan as the Cnpressus thmifera of Hnmboldt, an error which Professor Eindlicher afterwards detected, and changed to that of Cupressus Benthami.

Timber fine-grained and excellerit.
It is tolerably hardy.
No. 4. Cupressus Corneyana, Knight, Mr. Corney's Chinese Cypress.
Syn. Cupressus gracilis, Ilort. cernua, Hort.
Syn. Cupressus pendula, Stuunton.
" Juniperus Comeyana, Iort.
" $\quad$ " $\quad$ Chinensis Corneyana, Gordon.
" $\quad$ graeilis, Iort.

Leaves scale-formed, in opposite pairs, very small, stemelaspiug at the hase, somewhat oval in shape, more or less pointed, rumuled on the outside, with a slight depression in the centre, and closely imbricated in four rows, bright green on the adult branchlets, while those on the younger shoots are more acute, transparcut on the margins, and with a slight glaueous appearance. Branches slender, alternate, aud spreading, with the lower ones somewhat drooping, while those on the upper part of the plant are more or less ascending, and all of it reddish-hrown colour. Branelilets long, slender, more or less pendent, eylindrical, quite straight, numerous, regularly two-rowed, and thickly covered with small, bright, glossy, green, seate-like leaves, sometimes a little glauenus in appearance on the young shoots and sladed parts. Cones glohular, mostly solitary, and terminal on the shorter branchlets, from half to three-fonrths of an inch in diameter, and generally composer of ten seales in opposite pairs. Scales irregularly shichd-shaped, fow or five sided, and rising in the centre to a broad point, those nearest the apex of the cone being the smallest. most acute, and much more elevated than the rest. seeds numerous, under eacll seale, more or less angular, and firnished with membraneons wings on the margins. Seedleaves in twos.

A very elegant small tree, with slender drooping branches and lranchlets, very similar in appearance to those of the fermate form of the Chinese Juniper (Juniperus Chinensis), esiecially when young and before fruiting.

It is found in dapan and the northern parts of China, where it is called "Fir-moro" (slender or pendulous), and no doubt the real weeping Cypress of China.

No. 5. Cupressu's excelsa, Scott, the Tall Guatemala C'ypress. Syn. Cupressus Skinneri, IHort.

|  | " | aromatiea, Vem Houttc. |
| :---: | :---: | :---: |
| " | " | Kewensis, Mort. |
| , | , | Californica, Ifort. |
|  |  | aromatica, Ilort. |

Leaves on the young plants needle or awl shaperl, and glaucous, opposite, in four rows, all decurrent, at the base straight, and tapering to a sharp point at the summit, of various lengths, those on the ends of the branchlets much shorter, closer, and loosely imbricated, while those on the ardult branches are ovate, blunt-pointed, in opposite pairs, loosely imbricated, decurrent, and curved inwards at the points ; those on the branchlets very much shorter, thicker, ovate, and elesely imbricater in four rows. Branches horizontal, slender, short, and spreading. Bramehlets very slender, long, little forkerl, and drooping on the adult plants. Cones globular; in large clusters on the upper branches, nearly three-quarters of an inch in diameter, terminal, and on short, but not very slender, foot-stalks. Seales from six to eight in number, irregularly four-sided, larger ones in the middle, half an inch across, nearly flat on the face, with a short, stout, blunt point in the centre, sometinies a little curved downwards. Sceds rather large, eneireled with transparent brown wings, and numerous under cacla scalc.

A large tree, growing 100 feet ligh, on the mountains of Santa Cruz de Kiachequil, in Guatemala, producing excellent timber, which is very durable.

The plants are too tender for the climate of Eughnd, and require protection in winter.

## No. 6. Cupressu's fualebris, Eincllicher, the Weeping or Funcral Cypress.

Syn. Cupressus pendula, Hort.
Leaves imbrieated, partially open or spreading at the points,
fom-rowed, clasping the stem at the base, acute-pointed, rather threc-sided, of a greenish-cray colour, keeled at the back, and thickly set on the hranchlets. Branches spreading, forked, forse, sattered, horizontal, eured upwards, and pendulous at the ends; smaller ones long, slender, pendulons, lateral ones alternate, forked, and spreading. Branchlets twoedgel, leafy; and rather flat. Cones globose, solitary, on short imbnicated foot-stalks, and, when full grown, about half an inch in diameter, and of in hrown colomr. Scales seven or cight in number, shich-shaped, four or fire sided, and uneren round the margins, teminated with a round, blunt point, half sunk in the centre. Seeds angular; surrounted by pale ycllow inembranous wing.

It is, when old, in most graceful tree, with a straight stem, and long, dromping hamelocs, attaining a heieht of gol feet ; lut when goung it has ruite an opposite chanmeter, being rigin, pramidal, aml quite a compact hash, full of simple, long, lance-shaped leaves, distant and sureading, very glanenus, and not in the least imbrieated ; bit afterwarla it assumes, iss it gets noler, very much the appearance of the Indian Cypress ('uptessus torulora), which also becomes quite weeping, when whl, on the hills of Indial.

It wats first introduced into Fingland by Fortune, from the celebrated tea comintry, "Wheychon," in the north of China, and who describes it as having the hranches growing at first homzontal from the main stem, then deseribing a gratectul eurse upwats, and droupheg again at the points.

The (hinese name is "Tsain-sung" (common drooping), and the Manchurian one, "Saksin."

## No. 7. ('tpressis's Goveniana, Gudune Mr. Gowen's Califormian ('ypress.

Leaves inhricated, hlunt, thickly set in four rows, and bright grabs-green on the ohd plants, expanded, awl-shaped, very distant, more or fuss reflexed, sharp-pointed, and rather slender (1n the young plants. Franches very irregnlar on the main © :
stem, some being opposite, others alternate, very numerous, slender, and rather pendent; lateral branches spiral, freequently opposite, very dense, and of a beautiful bright green eolour. Cones in large elusters, glohular, half an inch in dimmeter, cach having from six to cight seales, which are nearly all foursided, and elevated in the centre to a blunt point. Seeds numerous mader each scale, rather small, diurk brown, irregularly angular, and membranous at the edges. Seed-leaves mostly in threcs, seldom in fours.

This beautiful Cypress was first diseovered by Mr. Hartweg, on the western declivity of the mountains of Monterey, in Upper California, within two miles of the sea-shore, in company with Pinus murieata, forming a dense bush, from six to ten feet in height. It is at onee distinguished from the great Californian species (C', macrocarpa) by its very much smaller cones, and more spreading, slender, somewhat pendulous branehes.

It wats naned in compliment to J. R. Gowen, Esq., late secretiry to the Horticultural Suciety of Londou.

It is quite hardy.
No. 8. Curressus Knigmtaij, Perry, Mr: Knight's Cypress. Syn. Cupressus Lindleyi, Klotsch.


Leaves opposite, scalc-like, not compressed at the points, fourrowed, sharp-pointed, loosely imbricated, decurrent, acutelykecled, with ithollow gland in the centre at the back; very distant, lance-shaped, large and ruming down the stem at the base, on the leading shoots, glaucous green, and standing free. Branches dark brown, stiff, scattered, rurely opposite, along the stem, the upper ones slightly spreading, the lesser ones horizontal, and frequently bending downwards. Branchlets mostly two-rowed, alternate, closely placed, mostly pointing
obliquely ontwards, and flattened. Cones globular, eight or ten lines in diameter, very glaucous, smooth, and with eight or ten scales in each. Scales elevated, shield-shaped, and convex in the centre, terminated by a short prickle, and containing under earh several flattish winged seeds of a light brown colour:

A handsome, virorous tree, with a conical head, and all the principal shoots of a beantiful glancon- violet, or reddish plumrolour, growing 1-() fere hish, and two and a half to three feet in diameter, on the mumtans of Mexico. It is much hardier in England than Cupressus Benthani, a kind with which it has been confonnded by some writers, on account of their never having seen the living tree; but Mr: Perry, a very accurate olserver of C'onifers, many years ago detected the mistake, and maned this kind in compliment to Mr: Knight, of Chelsea. It has sinee received other names, as indiented above. T'imber excellent.

A fine, strong, growing kind, with the younger branches of a violet or glaucous colour, and the handsomest and hardiest of the Mexiena kinds.

## Cepreseus Knightiana vabifgata, How.

 Syn. C'upressus Lindleyi argentea variegata, Jloit.A nice variety, with a portion of the branchlets of a silvery white enlour.

> No. 9. Cupressus Lawsonhana,* Mumay, Messrs. Lawson's Cypress.

Syn. Chamreyparis Boursierii, Camière, not Deccisne. Lawsoniana, Puilutore.

- Annong the imovations of some modern botanists, so prolific in the confusion of practical botany, this and Cupressus Nutkaensis have been renuved to the genus Chanaceyparis, although both of them have three or more sceds freely inserted on thic nipper surface of cach seale, as in the genus C'upressus, and conserquently not in accordance with the genus Clameecyparis, which las but two sceds under each scale, and in sunken gruaves.

Leaves on the adult plants ovate, in alternate opposite pairs, closely pressed, in four imbricated row, and of a crlancons green colonr, while those on the foung plants are laneeolate, sharp-pointed, sproading at the couls, and frequently furnishod with is small gland on the back. Branches crowded, flexunse, and more or lesis aseending. Branchlets very slender, flatteneel on the upper and lower surfiees, much divided, bending altermately in wards and outwards, and thickly eovered with decurrent leaves in alternate opposite pairs, elosely pressed torether on the adult plants, but spreading on the younger ones. C'ones solitary, terminal, many-sided, of a light brown colour, covered with a glaueous bloom when young, and about the size of in large pea, and on rather short foot-stalks. Sicales mostly six in number, but sometimes more, flat, with a rough external surface, of a corky texture, light brown, and irregularly four or five sided, with an elerated straight point in the eentre. Seeds somewhat ear-shaped, rather large, and mostly three under each sctile.

A large graceful tree, growing 100 feet high, and two feet in diameter, found in the Shastal and Scots valleys, and, aceording to Mr. Murray, along the banks of streams in a valley in the momntains of Northern Califormia, in lat. $40^{\circ}$ to $42^{\circ}$, where it formed the landsomest tree seen by him in his whole expedition, the habit of the tree being the most graceful, with the branehes at first eurved upwards, like those of the common Spruee, and towards the ends langing down like an ostrich feather, with the leading shoots, when young, irooping like those of the Deodar.

This beautiful tree is nearly related, and in some respuets somewhat resembles the Cupressus Nutkaensis (syn. Thuiopsis Borealis), but ilifters in being much slenderer and smaller in all its parts, and of a more graceful habit.

Timber, good, clear, and (asily worked, with a strong odmur.
It is quite hardy, and has mmerons varieties, of which the following are the most distinet:-
-'Uprbsses Lawsoniana aurea, Waterei, the Golden Variety of Lawson's Cypress.
A. pretty variegaterl variety, with some of the lesser spray and leaves of a grolden yellow, scattered all over the plant.

It is a rery desirable varicty when well variegrated, which originated in the musery of Mr . John Waterer, at barriot.
 Variegated Cypress.
Another very desimble variety, with some of the lesser branchlets and leaves of a silvery white, interspersed all over the plant, so as to give it quite a variegated appearance.

It urigimated in the musery of Messis. Lawon, of Edinlimerg.
('Uphesstis Liwsontand Ahcestea, //orto, the Silver-leaved Lawson's Cypres.
This is a strong growing, and somewhat drooping varicty, anffused with a silvery grlanoms tint, particularly on the yommgel parts.

It originaterl in the nursery of Messis. Wiaterer and Codfrey; at Knaphill.

C'Upmestes Lawsoniana albi spica, Moit, the Speckled Lawson's Cypress.
A very fine variety, the whole plant being ilonsely and regularly mottled with silvery white specks.
('cpressus Lawsuniana erecta, IIurt., the Upright Lawson's Cypress.
Syn. ('npuressus Lawsoniana stricta, Hont.
" " $\quad$ " $\quad$ " $\quad$ pramidalis, Moit.

This is a very fine amd distinct pyramidal variety, of which there are two forms, one with golden hotelied hranchlets, an! the other of a fine hright green colonr.

Cupressus Lawsonana fragrans, Standish, the Fragrant Lawson's Cypress.
Syn. Cupressus Lawsoniana aromatica, Ifort.
This is a fine strong-growing variety, with rather slender, drooping branches, and glaucous branchlets; and a very desirable kind, on account of the very agreeable aromatie smell it emits when handled.

Cupressus Lawsoniana lutea, Rollisson, the Yellow Lawson's Cypress.
This is a very fine and constnut variety, with the whole of the younger branchlets of a deep golden yellow. It is in the Tooting Nursery, and one of the very best of the golden-tinted kinds.

Cupressus Lawsoniana dutea flavescens, Cripps, the Light Yellow Lawson's Cypress.
This is a very pretty and distinct variety, with all the branchlets of a very prale, greenish-yellow colour, which originated in Mr. Cripps's nursery, at T'unbridge Wells.

> Cupressus Lahsoniana nana, Mort., the Dwarf Lawson's Cypress.

Syn. Cupressus Lawsoniana glauea nana, Hort.

$$
\text { " " } " \text { pmmila, Hort. }
$$

A niee compact, dwarf variety, with numerous short, slender, glaucous branchlets, elosely imbricated, with small ovate leaves.

This kind rarely exceeds one or two feet in height.
Cupressus Lawsoniana gracilis, Mort., the Slender Lawson's Cypress.
An elegant varicty, forming a dense bush, with a beautiful feathery appearance, and a deep glossy green colour.

Cupressus Lawsontaya minisa, Hort., the Miniature Lawson's Cypress.
Syn. Cupressus Lawsoniana pygmaa, Mort.
A curious, glaucous, pigmy variety, only suited for planting on rockwork.

Cupreses Lawsoniava pendetad Ama, Pinul, the Pendulous Latwson's ('ypress.
A fino graceful rariety, with pendulons branches, and branchlets of a beautiful, shining, silvery hue.

No. 10. Cuphesuts Lexsmanter, Milln; the Cedar of Goa.
Syu. Cupressin glauca, Lematert:
pendula, Irritior:
chlauea peondula, Hor tristis, Curtions.
Lusitaniea pemdula, How. patula, Tourncfort.
Sinensis, Lere.
pendula, Murt.
glauer, I'an Houtte.
Libani glauca, Kinight.
Goensis, IIort.
Lusitanica elegrans, Rinz. tristis, C'arriere.
Leaves imbricated, opposite, fom-rowed, acute, glaucous, keeled, and marked with a hollow gland on the back, stem clasping and adhering, exeept at the points, broad at the base, and tapering to an awl-shaped point. Branches spreading, dividel, flexuose, horizontal, turned down at the points, scattered on the stem, and rather distant; smaller ones branching out, and nearly pendent. Branchlets four-sided when youns. hint ronnled when old, crowded, forked, sprealing, incurved, pemblulous, and very mumerous. Cones glohese, three-quarters of an inch in diameter, eovered with a glaucous gray powder;
solitary, and on the points of the short lateral branclue.s. Seales shield-shaped, six or eight-ingled, and elongated into a reflexed broad point, teminated by a sinall prickle. Sects yollowish and mumerons, muder each seale.

A rather pendnlous growing tree, attaning a height of 50 fret, growing plentiful in Shain and Portugal, partionlanly at Bussaco, near Coimbia, in Portugal, but introduced into those comntries from Goa, in the East Indies, where it grows to an equal size with those of Spain and Portugal.

It is rather tender in the climate of London.
This species varies very much when raised from seed, produciug plants quite dissimilar in appearance, some being quite twiggy and pendulous, while others are more branehing and stiffer, and of all shades, from dull green to quite a glaneons white; henee the reason why so many different names are applied to this species and its variations, when perpetuated by rnttings or other artificial means by clealers.

It is mecrtain whether Goa or Cintria be its native sjot, or whether both liad it from China.

## ('upleessus Lusitanta rariegata, Loutson.

This differs only in laving white leaves intermixed on the lmanchets with the ordinary ones.

> No. 11. Cupressus Macnabiana, Murray, Mr. MaeNab's ('ypress.

Syn. Cupressus glandulosa, Hoolier.
", Juniperus Maenabiana, Lutuson.

Leaves in opposite pairs, distant, and spreading, broadest at the base, glaucous, and tapering to a sharp point, decurvent and keeled, with it hollow gland upon the under side on young plants, while on the adult plants they are much shorter, blunter pointed, thieker towards the ends, loosely imbricated, and with a large hollow gland in the centre on the outside. Branches short, mostly opposite, thiekly set on the stem, and curverl upwards at the points. Branchlets short, dense, slender, stiff',
and closely covered with small, oval, blunt-pointed leaves in fomr rows. (ones globular, three-quarters of an inch in diameter, frequently clastered on the upper lanches, or singly, on short, thick, woody fout-stalks. Scales in upposite pairs, mostly six in mumber, rather nome tham half an inch across, irregulaty fomr-sidect, each elevatid in the centre, and terminateal with a stout, blunt point, sumetimes slightly purverl, partienlarly on the half-grown eomes. Seeds mostly angular, lut sometimes rounded, and with seareely any trace of the wings.

A compaet, rather pyramilal, glaucous bush, growing from six to ten feet lighl.

It was first discurered by Mr. Seffere, on the Shasta mountains, in Nonthern Califumia, in lat. 41 , at an elevation of ;000 feet, and afterwards by Mr. Murmy in the same cometry, who tranamittel seats to Mcoss. Lawson. This beantiful Cspress is perlently havely, and must not he confomedel with a more slember and hos omamental kind, sulstituted for it ly an importor of C'ilifinmian Conifers.

##  Cypress.

Syn. C. Lambertiana, Goordon. " , macrocarpa fastigiata, K゙night.
" "Reinwamelti, Hont.
" "Lambertiana fastigiata, Comière.
". "Hartwegii, Cumirr.
Leaves ovate, imbricated, in four rows, bright grass grreen, and closely set upon the ohd plants; they are expanded, awlshaped, sharp-pointed, and thickly set upon the young plauts. Brauches irrecrulaly spiral, hat sometimes alfernate or opposite. younger ones and laterals opposite, dense and yuite grecon, older hameles dark brown, and nearly horizontal from the main tom. C'ones in clusters of three or fome together, oblong, one inch ant a half tong, and one broad, with ten scales, the larger
dark brown, and more or less angular: Seed-leaves in fours, but sometimes only in threes. Seeds angular.

In the year 1838 the late Mr. Lambert distributed among his friends a few seeds of this Cypress, without any name or indication from whence he had obtained the seeds, and from these seeds plants were raised, whieh, when large enough, were at once seen to be very distinet from any previously known; and 1 gave to it the name of C!. Lambertiana, in compliment to the late Mr. A. Lambert, and to mark from whenee they were first ubtained. Nothing, however, was aseertained further concerning the country from whence it came until some two years nfterwards, when I observed at Mr: Low's mirsery, at Clapton, a plant of the same kind, which had been reeeived from Dr: Fischer, of St. Petersburg, as a new species from California. At a later period Mr. Hartweg, when in Upper California, discovered it, and finding it had very large fruit, gave it the name of Cupressus macrocarpa, and which, having been published in his Journal, takes precedence of my mpublished though general known name of C. Lambertiana. It is identically the same plant, although some persons endeavour to make them distinet varieties; that there is some difference in the shape of the plants may be, but then that arises from all those plants known under the name of C. Lambertiana being raised from cuttings, white all those ealled C. macroearpa are scedlings, and have a more pyramidal-shaped head, while the eutting plants ( C . Lambertiana*) have a horizontal and rather flat-headed appearance.

It is one of the finest Cypresses yet introduced, on account of its beautiful bright green aspect, its great size and hardiness. Mr. Hartweg found it forming a tree 60 feet high, with $\Omega$ stem nine feet in cireunferenee, on the wooded heights near

[^2]Monteres; in Upper California, and with a far-spreading, branching that top, like a full-grown Cedar of Lehanun, whiel it very much resembles when oll. It is hardy, and will !row in ahnost any kind of soil which is not very poor.
 Large-fruited Cyprens.

Leaves small, open, ereetly-nprealing, rigide, very acute and spiny-pointed; and when young, of a beantiful silvery hue, iparticularly those towards the ends of the shoots. Branches short, stout, stiff, and very compact; branchlets excessively 'humerous, small, slender, stiff, rery dense, and of a silvery white at the points when young.

This fine and very distinet variety was mised in the musery of Mr: Cripple at Tumbridge Wells, from an imported seed of (Cupressus macrocarpin.

It is perfectly hatrly, and a very striking. variety, totally distinct from the uriginal form.
 cord-branched Cypress.

This rariety is more open and slenderer than the species, with the branches spreading and some what bent down at the rinls, and the branchlets and smaller spray long, less divided, and of a light glaucouss green.

A tine graceful variety, of which there are plants in Mr. ('ripls's extensive collection at Tunbridge Wells.

Cuphessus.s machocabia variegata, Mome, the Vimiegated Large-fruited $\mathrm{Cy}_{\mathrm{j}} \mathrm{res}$ s.
This variety nuly differs from the original form in having a portion of its branchlets of a golden hue.

No. 13. L'upressus Nutkaexsis, Hoolici, the Noutkia Sound Cypress. Syn. Cupressus T'eliugatskoyac, Hor

|  |  | Nootkaensis, Lambert. |
| :---: | :---: | :---: |
|  |  | Anericana, T'ruutetter: |
|  | Thuia | clst, Bonyard. |
| " | Thuiopsi | Borcalis, Fischer: |
|  |  | Tchugatskoyx, Currière. |
|  | Chamice | maris Nutkacnsis, Spuch. |
|  |  | execlsa, Fischer: |

Leaves in four rows, in opposite pairs, brondly orate at the base, sharp-pointed, and one-cighth of an inch long, very thick, smooth, of a glossy grecu, sometimes it little glaucous when young, on the ${ }^{11 p p e r}$ side, and pale, dull green below, convex on the bick, decurrent, and closely adhering at the base ; adult ones much shorter, awl-shaped at the points, keeled on the lack, without any grind, but furrowed, and closely imbricated; those on the young plants glaucous, somewhat lanceolate, quite stringht, extended at the points, loosely imbricated, and bristlepointed. Branches round, spreading, or eurvod upwards tor wards the ends, but sometimes those near the bottom of the trees are more or less deflected; sealy from the withered leaves, and of a brownish colour ; lateral ones in two rows, regularly placed alternately on each side, flat and Hexible; branchlet. in two rows, four-sided, rather distant, extended, and thickly covered with short, straight, regularly imbricated leaves. Cones solitiny, globular, almost sessile, or on the ends of very short, sealy bianchlets, about the size of a large peat, and covered with a glaucous bloom. Senles small, rough, and from six to cight in number, embossed, shield-shaped, with four or five angular or orlicular sides, elevated in the centre, in alternate opposite pairs, furnished in the middle with as straight, thick, conical, obtuse point, the lower pair much the thimest, and very elosely inserted at the brse. Seeds mostly three under each scale, freely inserted on the interior of the upper surface of the
scales, that, and ear-shaped, with a bony shell and membranous wings along each side, frequently much broader than the seeds, and eut more or less sloping at top and bottom.

A tine tree, growing in favourable situations from two and a tralf to fonr feet in liancter, and riving to at height of from so tor 100 feet, with a straight stem, covered with rather it off, smooth, dark-colomred bark, and well furmished with an ample branching and much-divided heard; timber white and soft, but aflording, in considerable quantities, a stronc aromatic balsim, somewhat resembling the Cimadian balsam in taste and smell.

It is found along the north-west coast of North Americia, particularly at Nootkia Suund, in Observatury Inlet, and on the Island of Sitcha, and is called "Tehugratikoy" (the Sivin, or strong-seented Fir) by the Rinsian setters on the Island of Sitcha, and about Nootka Sonnd, and was list introrluent into Fingland in 18:5, thengh the Rewsian garden at St. Peter.. burfh, maler the improper natme of Thuopsis Burealis, at name riven to it by the late Dr: Fischer.

It is quite hardy, amd hats the following variety:-

## 

sin. Thuiopsis Borcalis vaniegrati, Ilor\%.

Then variety differs in having it considerable number of the runds of the smaller bramehlets of a pale yellow, or white enlome intermixed with the ordinary green omes.
 Syin. C'. fastigiata, D. (!
" C. strictil, Miller.
, C. pyranidalis, Toosett.
„ C. Tommefortii, Audibert.

- U. forminta, Cevertpiu.
l.eaves mbricaterl, in four rows, sinall, deep, shining green, closely pressed to the stem, comex, hlunt, or pointed on young
plants, and persistent. Cones liurge, globular, one inch or more in diameter, withumerous large, woody, angular seales, slightly convex and mucronate in the centre, and separating when the seeds are ripe. Seeds numerous under each seale, yellowish brown, irregularly angular, and covered with it thin membranous skin.

An evergreen tree, growing in its native country $5(0$ or 60 feet high, with all its branches growing in an upward direction, and elosely pressed to the stem, like those of the Lomhardy Poplar.

The Upright or Common Cypress is a mative of Greece, Asia Minor, the south of Europe, and Persia, and cultivated in all the countries along the Mediterranean, and throughout the whole of Italy, from the foot of the Alps to Calabria, as well as in Sicily and Turkey. There are the fnllowing varieties:-

> Cuphessus semperytrans homzontalis, Miller, the Horizontal Cypress.

Syn. C. expansa, Audibert.
C. Orientalis, Hort.
C. mas, Ceescelpin.
C. horizontalis, Du Ilamel.
C. fastigiata horizontalis, D.C.

This differs in no way from the upright kind, exoopt in its manner of growth,--it laving its branches disposed in a horizontal direction, and very spreading, and only grows to about half the height of the mpright kind.

It is found indigenons in Cindia, Bithynia, and Persia, mixed with the upright kind; and some writers consider it a distinct speeies, but the yuestion as to whether the upright and spreading Cypresses are forms of the same, or two distinct species, is now well asecritained, and that both are only one splecies, for seeds of the horizontal variety will produce planty varying in shape and appearance from the spreading to the most upright form of the plant, white seedlings raised from
the upright, only prowluce plants with in tapering or conicalshaped head; and this may have led C'esalpin, and other encient writers, to consider one the male, and the other the female Cypress.

Cupressus semperviresis monstrosi, Hont, the Thuja-like Common Cypress.
Syn. Cuprersus sempervirens thujefolia, Cowière.
" " thujaformis, Perver:
" ., thujæoides, Lou:
A fine tall variety of the common upright Cypress, with its branches strietly erect, and the branchlets flat, 'and regnlarly placed horizontally in two rows; leaves seale-formed, regnlarly imbrieated, and with the smaller spay very much resembling thuse of the common Arbor-Vite, but not near so dense.

## 

Syı. C. fastigiatal varicerata, /Iorl.
This only dittios in having some of its shoots and leaves of a palc yelluw or white colour intermixed.

## No. 1.5. Cupressurs torcionsi, Don, the Twisted or Bhotan

 (yress.Syu. Cupressus Cashmeriima, Ifort.
Nepratensis, Lomdon.
pendula, Gritith.
Leaves very small, ovate, scale-formed, smooth, regularly and chasely imbricated in four rows, or shightly spreading, acute, miore distant, much longer, and very glancons, with a yellow tint on the young plants, but of a more greenish hue, with is tinge of gray on the adult ones. Branches spreading, alternate, or irregularly placed ahong the stem; lateral ones short, numerous, mostly in two rows, and slightly bent downwards; hamehlets, droopiner on eath side, and consinterably subdivided; fiom two to six inches long, elosely covered ly munerous oral-
pointed, imbricated, seale-like leaves, arranged in four rows resernbling sinall green cord. Cones globular, or somewhat oblong, from three-quarters to one inch long, and produced in great abundance in dense clusters, each cone consisting generally of ten scales, of the shape of a shich, with from four to six convex facets, rising into a kind of boss in the centre, which is stiff and woody when ripe, and furnished in the centre with is short, reflected, spiny point. Seeds small, nearly Hat, of a light brown colour, with a narrow wing round the border, and from six to seven under eacli seale. Seed-leaves only two in number.

A fine pyranidal tree, with numerous short, slender, horizoutal, or sometimes deflected branches to near the groumd, and drooping branchlets. It is found in great abundance in Northern Indial, at elevations of from 4000 to 8000 feet.

It grows to a great size ; trees from ten to fifteen feet or more in girth are common, and one at a place called "Urecho," in the Kothee State, north of Simla, is said to be six or seven feet in diameter: Major Madden says the Lime S'tone Mountains of "Nynce Tal" are covered from 4.500 to 6200 fect with clumps of the most stately trees, the height of many of them at least 150 feet, and all as straight as an arrow, with the branches drooping slightly towards the ground, and so arranged as to make the tree appear a perfect cone-the largest specimen measured by him being sixteen feet and threc-quarters in girth at five feet from the ground, and the spread of its branches twenty-four feet on cach side; but about twelve feet is the average girth of the fincr specimens at "Nynee Tal," where the tree is commonly called "Raisulli," or King Pine. It secms to be unknowi as an indigenous tree in North-West Kamaon, but in South-East Gurhwal it is in abundance at from 7000 to 8000 feet of elevation. It is the Weeping Cypress of travellers in the Himalayas.

This tree is called " Gulla," "Gulrai," and "Kullain," by the mountanecrs about Simla, all variations in their vernacular for Divine Trec, and according to Royle, it is called "Shujrut-
ulluc-yut" (tree of life), and that its fruit and branchlets are said to be a eure for all diseases, but that the profanation of it divine timber hy any one to a useful purpose of economy would be sure to loring down upon the individual sudden death.* The Bhotiyas also hold it sacred, and eall it "Surron," or "Soorah-vyu" (name divine), while on the other hand the people of Kamaon, who seem to look more to temporal than spiritual thinge, do not appear to hold this Cypress in much religious veneration, bnt, on the contrary, use its timber freely in their house-huilding, where it is considered very durable, but too flexille for any position where it has to sustain a heary weight. The wool is yellowish red, exceedingly fragrant, closegrained, tough, long-filmed, very hard, and considered equal to that of the Dendar for clumbility; the larger trees not unfrequently attain to an enomous size, some of them hasing a crith of twenty-seren feet, but at its greatest altitule it geits. dwarfed duwn to a mere bush, and is nowhere to be fommd beyond from To(r) to soor) feet of elevation, and like the Deodar, seems indifierent to genlogy, growing equally well on clay-slate, colomatic limestone, gneis-, and mica-shate; but a dry and somewhat sumy site seems essential for its full development.

Timber white, with a tint of red and yellow; is exceedingly fragrant, and considerel erual to that of the Deorlar for durability: Bark, reddish hrown, peelinge oft in mumerons long stripes, and frequently appears twisted, which is supposed to have suggested its specific name (torulosa). The wood and hrambles are burnt in sacred rites, as incense, among the Hindous, hoth to please the gods, and scare away evil demons.

[^3]It is more or less tender in England, and has the following varictics:-

Cupressus torulosa vimdis, IIort.
This variety differs in laving all its parts of ia bright glossy green, and rather slenderer than the species.

## Cupressus torulosa majestici, Hort.

Syn. Cupressus majestica, Knight.
This kind differs in nothing from the ordinary form of the species except in its more robust appearance, being much larger in all its parts, and much hardier, and no douht the large kind found on the mountains of Cashmere and Nepal.

Cupressus tomulosa rilia, Hort.
Syn. Cupressus torulosa, elegans, Hort.
" " $\quad$ " religiosa nama, Ilort.

This variety differs from the species in being very mokh smaller in all its parts, more compret, and very dwarf.

No. 16. Curdessus thurifera, Humbolet, the Incenscbearing Mexican Cypress.
Syn. Cupressus Uhdeana, Gorton.
" ., Schomburgkii, Ven Moutte.
" $\quad$ tetragona, Hort.
" Chamaceyparis thmifera, Encllicher:
" Juniperus thurifera, Bomplanel.
Leaves in four rows, ovate-lanceolate, imbricated, smooth, very glaucous, without any foot-stalks, and pointed ; those on the adult plants are much broader, more ovate, thieker; and blunt pointed, with a deep sunken groove along the back, and more closely imbrieated than those on the young plants, which are muel more pointed, longer, narrower, and spreading at the
points; one line long, and of a glaucous green colour: Branches spreading out horizontal, much divided, reflexed at the ends, seattered, and rather distant along the stem; lateral branches Hat, subdivider, two-rowerl, and spreading widely: Branchlets fonr-sided, straight, regnlarly placed in two rows along the sides of the lateral limaches, of a loright glamems greent, and thickly coverad with suall imbricated fiblage. Cimes solitary, rather small, glubular, aml of a hrownish colom; covered with a glaucons bloom, half an inch broat, and rather more in length, on very short fuot-stalks, and mostly compesed of six or eight seales, with a small terminal prickle or rudimentary seale on each, near the apex. Seales convex, shield-shaped, rounded un the margins, rarely angular exept on the upper ones, in opprosite cross pairs, the four lower or onter ones being connected at their base, much the largest, and flattened on the sides, while the inner or central ones are long, namow, shichd-shaped on the top, and spring from the centre of the others, and arenerally abortive or one-seded; while the altemate pairs of the others euntain two or three seeds moler eacle, of a brown colon, and nearly tlat. Seeds obovate, sometimes a little tlattened on one or two sildes, hard-shelled, aml with tripuetrous wings.

A landsume tree, 50 feet high, with horizontal spreading branches, reflected at their extremities, and frepuently fendent. It is found on the momitans of Mexice, particnarly in the torests of Tasen and Thehilotepice at an eleration of 5.500 feet. Br. V dhe found it it handsone tree, $1 ;()$ feet high, with a dense, mishy head, on the Orizabia and Real del Mont mome taine, in high exposed situations, at an elevation of from 6000 to 7000 fect.

This kiml las a number of small white specks irregularly sattered over the smaller spray, which form seale-like glands on the lacks of the minnte leaves.

It is one of the hardiest and finest of the Mexican kimls.

No. 17. Cupressus Whitleyani, Hort., the Upmight Indian Cypress.

> | Syn. Cupressus sempervirens Indiea, E. I. Comp. |
| :--- |
| $\quad$ Roylei, Cumier |
| $"$ |
| $"$ |$\quad$ Australis, Low.

Lenves on the younger plants in opposite pairs, distant, spreading, and of a slight glaucous ereen colour, awl-shaped, widest at the base, decurent, and tapering to a sharp point, from two to four lines long, quite straight, and thinly set o:n the branches, while those on the adult plants are very small, oval, blunt-pointed, closely imbrieated, regularly in four rows, thiekened towards the point, and glossy green. Branches numerous, creet, rather clistant, and thin on the young plants, but dense and elosely eompressed on the older ones, and forming a pyramid. Branchlets ereet, unmerous, mostly pointing upwards, thiekly eovered with foliage, and four-sided. Cones large, globular; one inch in dianeter, and very much resembling those of the Common C'ypress. Scales rather small, mostly eight or ten in number, nearly flat, or slightly elevated in the centre, with a very unevon surface, and short, blunt point. Seeds large, with rather a broad wing surrounding the seed.

A tall, pyramidal tree, aecorling to Mr. Elphinstone, growing 100 feet high in the gardens of Kohaut and Peshawnr. The tall Cypress is also found plentiful in Nopal and the Kooloo country, and very mueh resembles the Common Cypress when old, but has nut so elose or dense a head when young.

It is rather tender, but about as hardy as Cupressus torulosa, with which Indian travellers frequently confund it, although one is upright, and the other pendulous when ohd.

## DOUBTEUL SPECIES.

Cupressus corsuta, C'amiore, the Horn-sealed C'ypress.
Of this kind nothing is known, beyond Cariève's figure and deseription in the Revere Morticole, and that Professen Parlatore considers it a monstrous form of Cupresus Goveniant, with the scales on the cones drawn out and horn-shaped.

## Gien. DACRYDIUM. Solander:

Fluncis's dioccious, or male and female on separate plants.
Fiwit, theshy and erect.
Sherlw, with a lard, bony slell, resting in a short, lisk-formed, fleshy integument.

Lecteres, needle-shaped or seale-formed, and opposite.
Name, derived from $\delta a \kappa \rho v$ (dakru), a tear, the gummy exndation of the trees.

Trees and shruls, natives of Tasmania, New Zealand, the East Indies, and New Caledonin.

No. I. D.acryduy arateambides, Bronghient, the Araucarialike Dacrgdimm.
Syn. Arthrotaxus araucaricides, Brongniert.
, Dacerdium arthrotaxoiles, Cirmim.
Leaves small, spirally disposed, imbricate, ereetly ineursed, adnata at the hatse, free on the upper part, oblong, or ovatewhons, mumled at the points, convex and keeled on the back, and about one-sixth of an inch longr, and half a line wide.

A very brancling shrul, with erect, short, thiek branches, and rery numerons, short, cylindrical branchlets, from onesixth to at ymarter of an inch in diancter, thickly covered with small, ineurved, hunt-pointed, noal-oblong leaves.

It is a very handsome and compact shruh, with the aspeet of an Arthrotaxis, found on the Arid Mountains, near Mont Dere, and those of Kanale, in New Caledonia.

## Ni). コ. Dacrydium Beccahin, Purlatore, Mi. Beccari's Dacrodiun.

Leaves densely disposed in six rows, erectly-spreading, curved, long-linear, soft and bristle-pointed, or acotcly spines(ent, and all of a size and shape. Bmanches and banchlets drase, and thickly covered with leaves. Fruit solitary, seesile, sumen lat orbicular or oval, Ileshy, smouth, and one line aml a
half long, and one line broad; enclosed at the base by the outer involucra, and produced at the points of the branclilets.

A very clegant shrub or small tree, from 12 to 15 feet high, with a dense flat head, found on the top of the Poe Mountain, nenr Sarawak, in Borneo, at an elevation of so00) feet.

No. 3. Dachidiun Colensor, Moolet', Colenso's Dacrydime.
Syn. Podocarpus biformis, Endlicheri.
, Alania sp., Colenso.
Leaves many-slaped on the same branch, while on others they are all uniform, some densely four-rowed, regularly inbricated, ovate, rhomboid, bluntly-pointed, and one line long, while others are long-linear, loosely spreading, and from thee to six lines long, all leathery, of a loright glossy green, and strongly ribbed; again, others are scale-formed, somewhat triangular, obtuse, very closely arranged, regularly imbricated, and densely four-rowed. Branches long, and variably disposed, some ascending, others pendent, while the greater part are spreading and more or less horizontal. Male catkins terminal, solitary, and without foot-stalks. Fruit small, lateral, leathery, and placed on a horizontal, resinous disk, in the form of a cup.

A shrub or small tree of many forms, with the branches either ascending, spreading, or prostrate.

Mr. Bidwill found it on the western part of the northern island of New Zealand, at Dusky Bay, and on the mountains of Tongariro, Rahuine, and Nelson, at elevations varying from 4000 to 6000 feet.

No. 4. Dacrydium cupressinim, Solander, the Cypress-likcDacrydium.
Syn. Thallamia eupressina, Sprengel.
Daerydium Lolbii, Hor'.
Leaves awl-shaped, more or less four-sided, very dense, rigid, alternate, irregularly decussate, sometimes lonsely imbricated, or spreading, fully adhering at the hase, and decurrent; a
quacter of an inch long, thickest at the base, tapering to an obtuse, rounded point, and of a pale, yellowish-green colour. Branches srattered along the stem; lower ones spreading or A.flected; upper ones more or less ascending, regularly forked, amd much divided; lateral ones at irregular distances, forked. sender; longe, and pendent. Branchlets filiform, very slender, 'puite straight, seldom divided, gratefully dromping, thickly cowered with foliage, and of a pale, yellowish green, sometimes a little copper-colouren. Male catkins withont foot-stalks, oblong or ovate, and terminal; female flowers terminal, and enelosed in an incoluerum, whieh forms a sort of cup. Fruit solitary and terminal, in the form of a small red berry, eomtaming at back seed, amblenten by the matives.

A noble tra, growing $\because 01$ feet hirfh, and is fect in circumference, with pembent leranches, and long, slember, dmoping shoots, thickly cluthed with small, spiny leatese, and ray mach resemblimes somm of the Lyeopodimms. It is foumd in vast fioreste on the sunthem and middle islands of New Ye:aland, particulaty on the great momentans behind Duaky Jiny, where the settless call it the Native Spruce Fir, and the New \%alamlers "Dimm," or "Rimm."

It is mot harly:
No. $\therefore$ Dactiontem battm, Wullish, the Lofty Dactydim. Syu. Jmiperus elata, Rox Ineigh.
ricricla, Sirbe $:$.
.. ., Philipusiana, Ẅullich.
,. Lycopodium arboreum, Juggh.
" Dacrydium Junghulnii, Migul.
Leaves cither needle-shaped, fomr-comered, ar:ute-pointed, somewhat erect, and spreading, or seale-formed, orate-obtuse, rarely acute, and closely depressed, alternate, very dense, and firmin finur to seven lines long; those on the stem and lower part of the principal hamelues much shonter: more distant, vidhe, dement, amd slightly spreading at the points, while thow on the lesser branches and hamelilets are needle-shaperl, ahnowt iglindrital, spreading, slightly anfontar, compressed, and
very much smaller on the adult trees. Braneles numerous, seattered along the stem, with the lower ones spreading or bent downwards, and the mper ones mostly aseending. Branehlets slender, pendent, nmowous, and thickly dotleed with foliage ; those of the adnlt trees heing very much shorter, and cowered with small, seale-formed lemees, regularly imbrieated. Fruit orate, hluntly four-eornered, and solitary on the ends of the branchlets.

A loitly; pramidal tree, with a eylimhtical stem, covered with an ash-gray bark, slightly furrowed, and very full of branches, found on the mountains of Sumatra and PuloPenang, in the East Indies, where its native name is " Cambinur."

It is very tender:

## No. 6. Dachedium Franklinit, Hooler', Captain Franklin's Daerydium, or Huon Pine.

## Syn. Daerydium Huonese, C'umingliam.

Leaves sinall, scale-formed, very elosely pressed, and somewhat spirally ciccussate, ovate, rhomboid, and closely imbrieated, consex, and somewhat acutely keeled on the back, with the immer face eoncave, and acute or obtuse pointed, decurrent at the lase, and deep, glossy green, dotted on the outer siles with a glaneous powder. Branehcs aseending or spreading, sometimes incre or less deflected towards the bottom on the adnlt trees, lateral ones very mueh loaded with branellets. Bramehlets very numerous, dense, long, slender, and flexible. Male eatkins solitary, terminal on the ends of the branehlets, oval, or rounded, and from one to two lines long. Fruit suall, and in terminal spikes.

A large, pyramidal tree, with spreading or pendent branches, thiekly clothed with spray, growing 100 feet high, and 90 feet in eireumferenee, found in Van Diemen's Land (Tasmania), on the banks of the Huon River, and at Port Macyuarie. Timler exeellent for naval purposes.

It is tolerably hardy in the west of England.

## No. 7. Dacrydicy Kirkif, Mucller, Mr. Kirk's Daerydium.

Leaves on the sterile branchlets somewhat long, linear-elongated, obtuse at the points, and sprearling; while those on the fertile ones are emred, regularly imbricated, rhomboid, small, ohetnse, and rather compreased. Froit small, oval, omewhat (o)nprested and lateral.

This kind forms a bush or small trece, very nearly related to Dacertinn Colensoi, lomud in New Zealand ly Mr. Thumas Kirke.

No. S. Dichymum hamentixt, Homper, the Loose-leaved Dacrydimm.
Leaves linear-obuse, leathery, convex, and channelled on the upper surface, tapering to the base, hat not decnrent, the lower ones lonsely apreading, flawed, and seldom exceeding two lines in lene thi, while thase on the mper hranches and branchlets are owal, imhticated, much shorter, and keced on the lack. Brandues lowely pendent or prostate. Enanchlets rery Almon and iracefnl. Frait terminal on the chds of the bratheldet., sulitary, and erect.

A wanf listle shath, nut growing mase than thace feet high, lont coepping along the grownd, and very murh resembling the common (wownery (Fimpetrum nigrmm). It is found on the momatains of Nelan, at an clevation of from (i000) to Fonou) feet, and on Monnt Tongmiro, in New Zenland. The mative mame is "Rimm."

It is tolerably hardy in the west of England.

> No. 9. 1)arryntex taxomes, Bromyuiat, the Yew-like Dacrydium.

Syn. Podocarpus taxodioides, Cumiore.
Lames altermate, closely placed, falcate, obtuse at the emls, attmatral aml twinted at the base, from half to three quarters of an inch longe, and one line and at quarter lowad, with the mild-ribs on the mper and maler smfaces prominent.

A conical shrub, with subverticillate hanches, which have a purplith tint when poung. finmed on the werned monatains ne:rr Balade, in Ňew Caledonia.

## Gen. DAMMARA. Rumplius.

F'lowers, dioceious, or male and femate on separate plants.
Cones, orate or globular, and axillary:
Sectes, persistent, and without hateteas.
Seecls, unattiched, and solitary.
Secil-leares, in twos.
Lecuces, petiolated or almost sessile, opposite or alternate, and leathery.

Nome, derived from its native one in Amboyna, where the Malays eall it Dammar "puti," or "batu," on account of the large quantity of resin it produces, which at first is soft, viseid, and transparent, but eventually becomes hard, and like amber.

All large trees, natives of the East Indian Lslands, New Zaraland, New Caledonia, and New Guinca.

The Dammaras are distinguished fiom the true Pines and Firs by their broad, opposite, or alternate oblong-lanceolate, attennated, leathery leaves, with parallel veins, and in the male and fentale flowers being solitary and on separate plants; they, however, approach nearest to the genus Arumentice in being dioceious, but from whieh they differ in the form of the seales, in the absence of a bractea to each female flower, and in the seeds being winged only on one side, and free, or unattached.

> No. 1. Dammara Australis, Lambert, the Kanri Pine. Syn. Agathis Australis, Salisluriy. Podocarpus zamisefolius, Riclured.

Leaves linear-oblong, rarely elliptic, flat on lonth sides, alternate and distant on the stem and larger branches, but much closer, opposite and somewhat two-rowed on the branchlets; fiom one and a half to two inches and a half long, and from one-hatl to thee-quarters of an inch broad at the widest part, thick, leathery, sometimes falcate, of a shining greenish-brown colon', sometimes spotted on the upper part, and of a reddish
"opper colour, inuch less grlusy on the under side, frequently twisterl and tapering to the base, obtuse at the cmels, and without foot-stalks. Branches of a large size, spreading, mumerou, distant, shooth, and diviled into mumerons smaller ones; ascenting and leafy towards the top of the tree, hut naked at the botton from the fillen leaves. Male catkins solitary; cylindrical, erect, more than an inch long, and two lines in diameter: Cones almost spherical, from two to three inches in diancter, solitary, erect, and proluced near the top of the branches on stout fout-stalks. Seales broid, spreadinge, wedgereshaped, thick, leathery, closely imbricated, acute on the apes, very smooth, and becoming smaller towards the base of the cone thicker externally towards the apex, woody, hard, and membranaceons on the margin. Seeds in twos, wedge-slaped, and brown, having at the top on one side a thin, transparent, quite entire. oblique, pale-ooloured wing.

A large tree, attaining a lecight of from $1 \geq 0$ to 1.50 fect , amb about of feet in circumference, naked two-thirds of its cintir. hoight, and covered with a level, thick, lead-coloured bark, full of resinons matter. It produces an excellent hard brittle resin, like copal.

It is found in the northern parts of New Zealand, in furest. close by the River 'Thames, tuwards the district of Meremry Inlet; also mon the north side of the lakand of Wangaroa, and towame the western side of the Hokiangat. The natives call it "Kami," or "Kouri," aurl the settlers "Cowric."

It is not hardy.

A singularly grlatous variety of the New Zealand Cowrie, introduced by Mr. Hugh Low, of the Clapton Nursery; in Lscio.

So. or. Damman hypobeca, Moore, the White Uinder-leaved Damuara.
Syn. Damnara brevifulia, Moit.
Leaves obloncrolanceolate, cubtuse at the ends, bright shining
green above, and glaucous white beneath, and from one to two inches long, and about three-guarters of an inch broad.

A large tree, found at Port Molle, in New C'aledonia.
Its somewhat compact hatit of growth, and leaves of a bright green above and glancous bencath, are well-manked differeness in this species.

## No. 3. Dammara macrophydle, Lindley, the Long-leaved Dammart

Leares very large, ovate, lanceolated and pointed; seven inches long, and two broad in the widest part. Cones ovateobtuse, and very like those of the Cedar of Lebanon in size and form. Scales smooth, regulally inlaying, and much wider than long.

A large tree, growing 100 feet ligh, rery much resembling the Amboyna Pine (Dammara Orientalis), but with larger cones and leaves. It was discovered by Mr. Moore, on the island of Vanicolla, one of the Queen C'harlotte groul in the Soutl Scas.

It is very tender.

## No. 4. Damanaia Moorit, Lindley, Mr. Moore's Dammara.

Leaves very narrow-lanceolate, acuminate, slightly filleate, and slender, from five to six inches long, and less than half an inch wide. Cones unknown.

A very distinct species, of which little is known at present; found by Mr. Noore, seldom growing more than 40 feet high, and with an erect, compact head, in Now Caledonia.

It is very tender.

## No. 5. Dammara obtusa, Limelley, the Obtuse-leavel Dammara.

Leaves very variable in shape, but mostly oblong, rounded at the ends, nearly form inches long, and one inch and a quarter broad, thick, leathery, of at dark glosisy green, and without the least trace of a point. Cones oblong-eylindrical,
with the ends rounded, three inches long, and one inch and three-guarters wide. Seales eomex at the ends, abont four times ats lnoad as longe, ant quite different in that respect from the spreading proints of the New Zaland kind.

I large tree, very similar in appearance to the New Yautand Cuwric, fiom which it is distingmi=hed by the size and form of hoth its leaves and cones. It was found liy Mr. Moore, on the Inland of Aniteurd, one of the New Hebrides. Timber vahuable for slip-building.

It is very tender:
No. G. 1)amara Uridataris, Lambert, the Amboyma Pine.

> Syn. Jammana alba, Rumuh.
> loranthifolia, specth.
> Agathis loranthifolia, Sulistmo?.
> Dammata, Racherol.
> Ahies Smmatrana, Ieryont. Dammara, Poirt $t$. Pimns Dammata, Lambert. Simatrana, Mivbel. Dammana Rimphiii, Počl.

Leates apposite, hut sometimes alternate, wate-oblongo, atfomated at the hase, obitnse or munder on the [mint, fuite cotire, glabrons, of a thick leathery textmere, and glameromi areen, from two to four inches long, and nearly one inch and a half hroad at the widest part, stmirght, rarely falcate, smooth and dull green on buth faces, somewhat two-rowed on the young branchlets, and distant, those on the yound pilants ahmost lanceolate and sharp-pointerl. Branches vertical, is little reflected, and ascending at the extremities, forming is small houl on the adnlt trees. Branchlets and lateral banelic: in opposite pairs, and spreading. Male catkins about two inches lous. C'ones erfobular or turbinate, singly; on footstallss, rising from the axil of the leaves, near the extremitice of the hamehes, from the to fom inches loner, and mome than two inches brom. Scales adpereered, smonth, rounded at the
top, thiek, and very closely inlaying. Seed unattacherl, with an obtuse, one-sided wing, covering the rib of the scale.

A huge tree, growing upwards of 100 feet hight, with i straight, smooth bark and trunk, from cight to ten feet in diameter, found on the very summit of the momitains of Amboyna and Ternate, and in many of the Molueca Islands, Java, and Borneo. Timber of little value; but it produces a fine transparent resin, sometimes hanging like icieles, and much esteemed by the natives for ineense. Its Malay name is "Dammar."

It is very tender.
There is the following viniety :-

> Dammara Orientalis Aliba, Knight. Syn. Dammara alba, Makoy.
> " Orientalis pallens, Carmière.

This varicty differs from the species in having much longer and more lancoolate-shaped leaves, with the edges more regularly rolled up on the under side, slightly undulated, whitish, and tapering much to the point, but abruptly and irregularly so to the base, and with the bark on the branches of a much whiter colour than the species.
Nu. 7. Damaira ovata, Moore, the Ovate-leaved Dammara.
Leaves more or less opposite, subdistich, ovatc-oblong or ovate-lanceolate, somewhat acute, leathery in texture, bright green, on rather short, twisted petioles, and from fom and is half to five inches long, and from one to one inch and a half broad. Cones large, ereet, oval-globose, obtuse at the ends, and five inehes long and four inches broad. Scales broad, obovate, more or less horizontal, somewhat thickened at the top, and rounded and entire on the edges, and one inch and it half broad.

A large tree, found in New Ciledonia, with subverticillate and somewhat horizontal, terete branches, and a stem corered with an ashy-gray bark, copiously produeing a white resinous matter.

No. 8. Dammara mbista, Moore, the Robust New Holland Dammara.

Syn. Danmara Brownii, Mort. Bidwillii, Hort.

Leaves somewhat opposite, subdistich, oval-lanceolate, rather blunt at the points, on very short, twisted foot-stalks, bright glossy green, and from three and a half to four inches long, and from one to one inch and a half broad. Cones oval, with the ends rounded and somewhat depressen, and from three and a half to four inches long, and from two to three inches wide. Scales broad, ohovate-riomboid, thickened at the apex, very obtuse, or somewhat trumeate, at the cmuls, nud one inch and a quarter long, and nearly one inch and a half wide. Seeds half an inch long aml a quarter of an inch wide, with an ample wing three-quarters of an inch long.

A fine tree, varying in height from 3.5 to 70 feet, with the handhes in whorls of from five to ten in number, found on the north-cast part of New Holland, at Dusky Bay:

> No. 9. Dammaba Vitiexsis, Seemamm, the Fecjee Island Dammara.

## Syu. Dammara longifolia, Limelfry.

Leaves unore or less mprosite, sulsdistieh, oblong or ovallanceolate, rounded at the lase, on short twisted fort-stalks, hight green above, somewhat glancons beneath, slightly rerolute on the margins, and from two and a half to five inchess longe, and from one-half to one inch and three-quarters broad. Cones ovate-glubose, rounded at the ends, and from three to three inches and thrce-guarters long, and three inches wide. Seales oval, thickened at the apex, and either rounded or somewhat acute at the ends, and one inel broad.

A splendid tree, from 40 to 100 feet high, with large and very variable leaves, found on the momutains of Nisarim, and other parts of the Viti or Fecjee Islands.

## Gen. DISELMA. J. Hooker.

Flowers, diœecious, or male and female on separate plants; the male eatkins very small, oval, solitary, and trrminal ; the female ones small, sub-globose, and terminal.

Comes, very small, globular, and emmposed of four scales; the two outer ones being ovate, aceute-pointed, short, and sterile; the two inner ones oval, romuled at the ends, fertile, and nearlydouble the size of the outer ones.

Seecls, in twos or threes, mader each of the fertile scales, almost round, and amply thee-winged.

Leaves, sinall, scale-formed, ovate-rhomboid, regularly imbricated, in four rows, conrex and kecled on the back, concave on the upper side, and with narrow, membranous margins.

A very branching shrub, with the female plants prostrate and the male ones crect, found on the western mountains of Tasmania.

Diselma Archeri, J. Hoolier', Dr. Archer's Diselma. Syn. Microcachrys tetragona, Archer', not Hoolier:
Leaves small, scalc-formed, orate-rhomboid, obtuse, regularlyand closely imbricated in four rows, convex and keeled on the back, concave on the upper surface, and with narrow, membranous margins. Branchlets numerous, slender, and tetragonal. Flowers diœcious. Male catkins very small, oval, soiitary, and terminal ; female ones small, sub-globose, and terminal. Cones very small, globular, and composed of four scales; the outer pair being ovate, acute-pointed, short, and sterile; and the two inner ones oval, rounded at the points, fertile, and nearly double the size of the outer ones. Seceds in twos or threes, under each of the fertile scales, almost round, and broadly three-winged.

A very branching shrub, resembling the Microcachrys tetragona, with the female plants prostrate, and the male ones erect, and from eight to ten feet high, found on the western momtains of 'Tasmania, at an elevation of from 4000 to 5000 feet.

## Gen. FITZ-ROYA. Hooker:

Flowers, diocious, or male and female on separate plants.
Cones, star-like bodies, lraving their axis terminating in three soft club-like glands or abortive seales, and consisting of nime seales, there in each whont.

Srales, nine in number, in whorls of three, the lower three altemate with the numer leaves, the intermediate three only are fertile, the upper three are alternating with the fertile oms. flattened, and stinding with their edows hent outwards.

Seerls, three under each fertile scale, surrounded by a hroad wing, ending in a namow neck, the centre seed attaehed to the seale, the other two to the axil, but sometimes two seeds are on the seale, and three on the axil. (Hooker:)

Lectece, in whorls of three, but sometimes in twos or fonms, ovate-oblong, flat, withont any font-stalks, and more or liss spreading, or loosely imbricated.

Named, by 1)r. Hooker, in compliment to Copt. Fitz-Roy, who first diseovered the tree.

A large evergreen tree, foumd on the Patagonian momntains.

## Fitz-Hoya Patacionici, Morlier, the Patagonian Fitz-Roya.

Leaves in whorls of three, hut sometines in twos or funs: linear, or ovate-oblong, and mostly hhmepointed, decussste, Hat, without any foot-stalks, ant spreading, of a deep green alove, and with two glancons lines on the muler-side, from fom to six lines long on the young plants, but much smaller amb cluser on the adult ones, from one to one line and a half long. clowely imhicated, almost oval, and with hardly any traces of the glanerous hands on the under side. Braneles irregularly placed along the stem, spreading, rather slender, and hent lownwads towards the extremities: branchlets short, numerons, rather clustered, and thickly clothed with foliage. Cones small, solitary, and terminal, star-like bodies, laving their ases teminating in thre soft club-like glames or abortive seales.

Sir William Hooker deseribes the fruit as consisting of uine scales, three in eneh whorl, the lower three whieh alternate with the uppermost leaves are bareu, the intermediate three only are fertile, the three uppermost alternate with the fertile ones and are flattened, but stand with their edges bent out wards, each fertile seale has three erect seeds, surrounded by a broal wing, and ending in a narrow neek; the eentral seed is attached to the scale, the other two to the axil, but sometimes two seeds are on the scalc, and three on the axil.

A large evergreen tree, growing 100 feet high, with a thick, spongy bark, and slender, spreading branches, bending downwards at the ends in a curved mamer. The wood is red, and bears considerable resemblanee to that of the C'edar of Lebanon.

It is found on the Patagonian mountains, growing in rocky places on the Pacifie side, to a large tree, with a stem eight feet in diameter, but diminishing with elevation until it dwindles down to a small bush, only a few inches high on the borders of perpetual congelation.

It will stand our ordinary winters in favourable situations, but is much injured in severe ones.

## Gen. FRENELA. Mirbel.

Floner's, monoreious, or male and female on the same plant, but separate.

Cones, globular, or conical, and eonsisting of six, or rarely eight valvated scales, the alternate ones being much the smallest and shortest.

Seeds, numerous, more or less angular, and laterally winged on both sides.

Leaves, mostly ternate, scale-formed, and decurrent.
Secd-leares, in threes.
All trees or shrubs, natives of New Holland, and not liardy.
Named after M. Frenel, by Professor Mirbel of Paris.

No. 1. Frexela arexosa, Eindlicher, the Sand Frenela.
Syn. Callitris arenosia, Suect.
An evergreen bush, of which little is known, found growing in sandy places in New Holland.
No. コ. Frexela Australis, Monker, the Australiam Fremela.
Sy u. Frenela Ventenati, Mirbel.
triquetria, Spach.
rhomboidea, E'ndlicher:
Callitris rhomboidea, Brower.
cupressiformis, Ventenct.
Australis, Hooker.
articulatil, Pinet Woburn.
Thuja Australis, Poiret. inequalis, Desjontuin.
Jumiperus ('mminghamii, //oo\%.
An evergreen tree, with scale-formed leaves, decurrent at the hase, and plated in threes at the bottom of each joint, but sometimes acittered, extended, spreading, and of a very glancons white colour: Branches and branchlets slightly angular and slender. ('ones globular, mostly in clustery, but sonetinu's solitary, on short foot-stalks, and about the size of a common mut. Vialves thick, rounded at the ends, oval, woody, smooth, or longitudinally wrinkled, and with the central colnmn short, and three-edged. Sueds oval, usseous, and furnished with a narrow membranaceous wing on the sides.

A tree, growing from 60 to 70 feet lighl, fund on the east coast of New Holland, and Van Diemen's Land, where it is called hy the settlers, the Oyster Bay Pine.

No. 3. Frevela calcidrata, C'emingham, the Spurred Frenela.
Syn, Callitris calcurata, R. Browen.
„Frenela ericoides, Encllictur:
"Juniperus ericoides, Foisetle.
An evergreen tree, of which little is known, found in the interior of the easteris part of New Holland.

## No. 4. Freneli canescerss, Parlatore, the Hoary Frenela.

Leaves in whorls of three, adnate, quite fiee at the points, houry and glittering, and with those on the branches somewhat acute, and those on the lesser branchlets obituse. Cones globose, solitary, somewhat crect, grrayish-brown, half an ineh long, and the same broad, and composed of six valvate seales plaeed on a somewhat short, three-sided column; the three larger ones are oblong-obtuse, and the other three slort, oval-lanceolate, and somewhat obtuse; and all convex on the back, smooth or slightly wrinkled and mutic; seeds small and blackish, with broad and somewhat orbicular wings, decply cordate at the base.

A small tree, with terete branches, and erowded, slender; short, subterete brauchlets, which are ereet and hoary; found in the south-western part of New Holland, and at the Swan River.

Nu. 5. Frenela columellaris, Mucllei, the Pillar-fashioned Frencla.
Leaves in threes, adnate, fice at the points and triangulat. Cones small, globose, solitary, or in twos and threes, innl composed of six valvate seales, the three shorter ones, linearlanceolate, seeds almost all two-winged.

A kind of which little is known, found along the banks of the tributary streams of the Riehmond River in Australia.

No. 6. Frenela Drumaondi, Purlatore, Mr. Drummond's Frenela.
Leaves in threes, adnate, somewhat obtuse and free at the points, convex and kecled on the back, and quite smooth, and green on the upper surface. Cones, somewhat globose, mostly solitary, shining, chestnut-brown, and half an inch long, and rather more broad, and consisting of six valvate seales, the three larger ones being oblong-obtuse, and the three lesser ones somewhat acute, and all quite smooth on the back.

A large shrub, in feet high, with terete branches and thickened, erect, alternate, three-edged branchlets, found in the south-western part of New Holland, and at the Swan River colony:

No. 7. Frextela Endlicueri, Partitore, Professor Eindlicher's Frenela.

> Syn, Frenela fruticosi, Ene ll icher: " Anstralis, Eudlicher.
> " C'allatris fruticosa, Brown.
> " C'upressus Australis, Persoon.

Leaves in threes, adnate, convex on the back, free and somewhat obtuse at the puints. Cones globose or oval obtuse, three-fuarters of an inch long, and rather more than half an inch broad.

An evergreen bush, with loose, subterete branches, crowded with somerrhat slender three-edged branchlets, and with orate, hry, wooly, six-valved cones, smooth interually, and with a very short, depressed, three-sided, éentral column; and seeds with narrow, lateral winge, rounded on the edges.

It is found in the interior of the eastern part of New Hulland, and about Port Jackson.

No. 8. Frenela Futherghli, Endlicher, Fothergill's Frenela. Syn. Callitris lothergilli, Loudon.
, Cupressus Fothergilli, Pinet-Wobum.
A large pyramidal bush, or small tree, with ereet branehes, and mumerous dense branchlets. Cones solitary, conical, and quite woody. Vilves unequal, and rounded at the ends.

It is nearly hardy, and comes from the mountains of Tasmania.

## No. 9. Frenela (iullelmi, Parlatore, Prince Culielmis': Frenela.

Leaves in threes, adhate, convex on the back, short, some-
what blunt-pointed and free at the apex. Branches terete. Branchlets loosely erect, somewhat forked, slender, and threesided. Cones solitary, globose, half an inch long, and rather broader, and composed of six valves, the three larger ones being oval-oblong and somewhat blunt-pointed, the three lesser ones short, narrow, lanceolate, and acute, and all smooth, shining, and convex on the back.

A bush, or small tree, found in the southern part of New Holland, at Salt Lake, near Tungetta.

No. 10. Frenela Gunnis, Endlicher, Gumis Frenela.

|  | llitris | Gunnii, |
| :---: | :---: | :---: |
| , | : | oblonga, Richaicl. |
| " | " | macrostachya, Hort. |
| " |  | glauca, R. Brown. |
| " | Frenela | Australis, Brown and Mirbel. macrostachya, Knight. |
| " | , | variabilis, Currière. |
| " | , | glauca, Mi,bel. |
|  | Cupressu | us macrostachya, Hort. |

Leaves small, scale-formed, sharp-pointed, elosely adpressed at the base of cach joint. Branches ascending. Branchlets ascending, angular; smooth, glaucous, and slightly jointed. Cones somewhat conical, very rarely elliptic, solitary, or in pairs; but sometimes in clusters, sessile, or placed on very short foot-stalks, and both growing on the branches and principal stems. Valves mostly in six, but sometimes seven and eight in number, thick, rounded on the ends, and uncqual sized, the altermate ones being much shorter and sinaller than the others, convex, much rounded in the middle, and shining brown externally. Sceds broadly winged, and rather angular:

An evergreen shrub, from five to nine feet high, with a pyramidal head, found in Vian Diemen's Land, where the colonists call it "The Native Cypress."

It is tender.

No. 11. Fremela Hugeerit, Comière, Hugel's Frencha. Syn. Collitris: Hugelii, Kınight.
Leaves seale-formed, very short, closely adpressed, much longer and more pointed on the branehes than on the smaller branchlets. Branches somewhat ascending ; lateral ones rising up at the shles, and forming at slighty arealing head. brauchlets spreading, obtusely angular, and very short jointel. ('ones sulitary or in chasters, sume what glohular, depressed, and frequently much broader than long. Vilves unequal, the three alternate ones being funch shorter and smaller than the whers, wrinkled extemally, ind shining.

A pramidal tree, with asemding branches, found on the sonth-west coast of New Holland and Swan River.

No. 12. Frenfla Maclethisa, Potutora, Mr. Macley's Frenela.

> Syn. Leicharltia Macleyana, Shepherd.
> " Octoclinis Matelana, Mucllei:
> " Backhonsii, Hill.

The primortial leaves on yomerg plants are preading, lincar or lanceolate, rather thickly placed, and sometimes reflected; lut sum afterwards are suceeded by acicular or seale-formed ones, regularly plated in threes or fours, and finally, when the plants become fully matmed, they are entirely seale-formed, termate, rery small, and closely phaced. Branches seattered alourg the main stem, horizontal, short, and not very dense; the lateral ones and smatler spmy are nore or lesis angular or triangular, jointed, glatuenus, and with the joints tolerably distant. Cones oral or somewhat conical, and composed of dight valvate seales. Sieales or valves thick, rounded and couvex on the ontside, glusisy brown, puintless, smouth, and swelling at the apex, which is slightly reflected.

A handsome, erect, pyrandal-shaped tree, approaching in appearance when old to some of the Australian Arancarias, but with much shorter and slenderer branches.

It is found in New South Wales, Brishanc, and Quceusland, where it attains a height of from (i) to $\overline{7}$ ) feet.

No. 13. Frexela Mooril, Pailatoire, Mr. Moore's F'rencha. Syn. Frenela verrucosa levis, Moore.
Leaves in whorls of three, adnate, and quite free at the apex; those on the branches are lanceolate, acute, and somewhat spreading ; those on the branchlets are closely adpressed and blunt-pointed. Cones roundly-ovate, ereet, and composed of six valves, the three larger ones being ovate-oval, and somewhat blunt-pointed, and the three lesser ones shurt, oblong-lincar, and rather blunt, and all of them slightly wrinkled or netted on the back, and placed on a short, acute column. Sceds small and oblong-linear.

A tree from 60 to 90 feet high, with terete branches, crowded with slender, three-sided, glaucous branchlets. It is found in the maritime parts of New Holland, near Moreton Bay, and along the Clarence, Richmond, and Darling Rivers.

No. 14. Frenela Muellemi, Purlutore, Mr. Mueller's Frencla.
Leaves three in a whorl, seale-formed, adnate, obtuse at the points, and closely pressed, with only the apex free. Cones solitiny, but often close together, sub-globase, one inch long, and composed of six valves, which are smooth, or slightly wrinkled on the baek; the three larger ones are oblong, and rather blunt-pointed, and the three lesser ones mostly short, narrow, linear-lanceolate, and acutc. Seeds oblong, two or three winged, blackish, and two lines long.

A handsome tree, from 20 to 30 feet high, with a dense head, terete branches, and erect, thickish, three-sided branchlets; found in the eastern part of New Holland, about Porl Jackson, Sidney, and South Head.

## No. 15. Frenela Parlatoret, Mueller', Professsor Parlatore's Frenela.

Leaves in threes, adnate, convex, and keeled on the back, with the points free and acuminate. Cones large, ovoid, nodding, and more than an inch long, and composed of six valves, the three larger being ovate-lanceolate, and the three lesser
ones narrow, short, and lanceolate, and all keeled on the hack and obtuse at the ends.

A tree 60 feet high, with the branchlets frequently jointed, found in the casteru part of New Hollaurd, on the Darlinir Range, and Qucensland.

Non. 16. Frenela propinqua, C'urminghetion, the Related Frencla.
sym. Callitris propinqua, R. Brome.

An everoreen pyramudal hush, of which little is known, found in the eastern part of New Hulland.

> No. 17. Freama promminala, Cerioiore, the Pyramidal Frencla.

> Syzn. Callitris pyramidalis, sucet.

Leaves very sinall, scale-furmed, very close, olstuse, and very rarely pointed. Branches ascending und dense; branchlets very mumerous, small, and pressed towards the ends of the branches, of a grayish colour, angular, and loose. Fruit unkiown.

A pyramidal bush or small tree, found in New Holland.

Syn. Jumperus rigida, Nocisettr.
A small bush, of which little is known, found in New Hullaud.

No. 19. Frexela nonusta, Cuminghem, the Robust Frencla.
Syn. Callitris robusta, R. Brown.
" $\quad$ Preissii, Miquel.
"
" Frenela glancal, M. Brown. Mirbel.
"
"
grassivalvis, Miquel.

A large pyramidal tree, from 20 to 30 feet high, with very small, scale-formed leaves, slightly spreading at tho points,
and mucronate. Branches ascending. Branchlets slightly angular, or three-edged. Cones spheroidal, much depressed, and frequently broader than long. Valves warted on the interior, with the central column short and three-edged. Seeds furnished with narrow lateral wings.

It is found on the south-west coast of New Holland, and at the Swan River, where the natives call it "Marro."

No. 20. Frenela Rofi, Endlicher, Roc's Frencla.
An evergreen bush, with globular cones composed of six valves, smouth on the interior; with it short, depressed, threesided, central column, and acute-pointed valves, found on the south-west coast of New Holland.

## No. 21. Fresela subcordata, Purlatore, the Subcordateconed Fienela.

Leaves three in at whorl, ardnate, convex, and keeled on the back, with the points free and somewhat acutc. Branches terete. Branchlets flexuose, alternate, and threc-sided. Cones subcorlate-globose, half an inch long, and about the sanne broad, and composed of six valves.

It is found in the south-west part of New Holland, at Kinge Gcorge's Sound.

No. 2.2. Frenela subunbbllata, Pailatore, the Subumbellatibranched Frencla.

Leaves in fours, adnate, and strictly kecled on the back, and with the points free and obtusc. Branchlets crowded, erect, alternate, subumbellate, and triangular:

A tree, found in New Caledonia, of which little is known.

> No. 23. Frexela sulcata, Parlatore, the Sulcate-coned Frenela.

Leaves tlree in a whorl, adnate, convex, and keeled on the back, free at the points, and somewhat obtuse. Branchlets
somewhat thickened, erect, alternate, and three-sided. Cones globose, flattencd, half an ineh long, and about one-third of an inch wide, and composed of six erect, somewhat three-sided, pyramidal valves, the three larger of which are somewhat notuse-pointed, and the three lesser ones somuwhat acute, and all ileeply furrowed on the back. Seeds small, ovate, and threw-sided.

It is fomml in New C'aledonin.

No. こt. Frbexfi.a tuberculata, Mirlel, the Thberculated Fremela.

> Syn. Callitris tubereulata, R. Bromen.

An evergreen hush, from the sumthem part of New Holland, of which little is known.

No. 2j. Frisela terkecose, C'unuinghium, the Warted Frenela.
Syu. Callitris verrucosa, R. Bomer.
An evergeen ly ramidal tree, with small, seale-fomed leaves, frequently preading at the points. Branches spreading on ascending sery rompact, and cylindrical. Cones globular, depressecland sometimen broader than long. Valves extermally covered ly large, irregular tubercles, and internally warted, central colmun ohlong, and three-sided. Seeds broadly winged.

It is found in the interior; on the eastern part of Now Holland, along the Murray River, and in the colony of Victuria, and is called the Murray Pine by the settlers, and the Marmmy Ly the Indians.

Gen. GLYPTOSTROBUS. Endlicher: The Embossed Cypress.

Flower's, monocious, or male and female on the same plant, hut on separate parts, and terminal.

Cones, egg-shaped, or oblong, and composed of several un-equal-sized scales, all rising from the same point at the base, and leathery:

Seceds, two muder cach scalc.
leaves, scattered and trigonal.
Name, derived from "Glypho," cmbossed, and "strobus," a cone ; scales of the cone embossed on the face.

A small tree, native of China, where it is called Water Pine.

> Glyprostrobus heterophyllus, E'ndlicher, the Chincsc Water Pine.

Syn. Taxodium maferum, Brongniart.
" " Japonicum, Denhardt.
" " hetcropliyllum, Brongmiart.

Selmbertia Japonica, S'pael. nueifera, Denlardt.
Thuja lineata, Poiret.
" " lavandulecfolia, Poiret.
" pensilis, Stuunton,
Cupressus nucifera, Hort.
Sincnsis, Hort.
Juniperns aquatica, Rowburgh.
Leaves of various shapes, alternate, some seale-formed, small, ovate, acute or obtnse pointed, sometines muel longer, closely pressed and decurrent along the shorts, sometimes two-rowal, regularly tortuose, and almost awl-shaped, fiom three to eight lines long, slightly curved, blunt or somewhat acute at the ends, and of a glaucons-gray colonr, the lower ones near the base of the shoots frecpuently very short, scale-formed, somewhat
triangular, imbricated, and compressed, but increasing in size and length towards the points of the shoots, and spreading out into rather long, awl-shaped, recurved leaves. Branches rising upwards and spreading out at the summits. Branchlets alternate, stout, and rendered angular by the decurrent base of the the leaves; the cone-bearing ones of varions lengeths, ant conered with rery small scalenf-formed leave, particularly at the bace of the cones. (ones teminal, erse-shaped, on oblongeylindrieal, tapering to both conds, blunt at the apee, and composed of several mequal-sizei scales, the smatler ones being towards the base, and all rising from the same point at the base upwards, imbricated, aud furnished with a stout, shortcurved, blunt point on the back near the end of the scale, prolecting outwards.

A small tree, or large lush, growing from cight to ton feet high, with a straighe stem, and fastiginte head, a little extended at the top, and nearly evergreen.

It is found in many parts of China, particmlarly in the provinces of Shan-Tung and Kiang-man, and is planted along the margins of rice fields abont C'anton.

The Chinese name for this tree is "Then-tsong" (Water Pine), of account of its growing in places frequently inumdated hy water, and along the margins of rice fields.

It is tolerably hardy in England.

Gien. JUNIPERUS.* Linncens. The Juniper.
F'loners, diacions, or male and female on different plants. The males, axillary or terminal catkins; the female ones small axillary buld-like hoolies, hractented at the base.

[^4]Fruit, a globular kind of berry, composed of a fleslyy or fibrous juicy substance, covered with a glossy skin, more or less furnished externally with minute scales, and sometimes angular and naked at the apex.

Seecls, from one to five, but mostly three in each fruit, ohscurely three-corncred, and covered with a hard bony envering, having gland-bearing pits towards the base.

Leaves, simple, opposite or ternate, lanceolate or scale-formed, and cither in extended whorls, or closely imbricated in four rows.

Seed-lecrices, in twos.
All evergreen shrubs or small trees; found in the temperate and frigid regions of Emrope, $\Lambda$ sia, Africa, and America.

The trees and shrubs belonging to this genus generally produce the inale and female flowers on separate plants, with the leaves mostly sharp-pointed, stiff, and usually in whorls of three; but sometimes they are mere seales, closely imbricaterl in four rows (as in the Cypress), or occasionally both kinds occur on the same plant at different stages of its growth. The male strobili are small, ovate bodies, and either placed at the ends of the branchlets or in the axil of the leares, and with from four to eight one-celled anthers at the back of each scale. The fertile catkins consist of three fleshy scales, at first nearly concealed by imbricated bracts, from which they gradually rise, grow more succulent, and finally become consolidated into a small, round, fibrous, spongy berry, enclosing from one to three bony seeds, but mostly three, which are convex on one side, and angular on the other. The berries (Galbules), when ripe, are for the most part cither of a deep purple, black, or reddish brown, and whẹ crushed, emit a strong resinous smell.

## Section I. OXYCEDRUS, the true Junipers.

Leaves, in whorls of three, spreading in the adult plants, jointed at the base, and glandless on the back.

Fruit, globular and smooth.

## No. 1. Juxiperlis Canablissis, Louldiges, the Canadian $J$ uniper.

Syn. J. communis depressia, I'ursh.
" " nama montana, Éndlicher:
" "Mepressa, Booth.
". :dealbata, Dougluw, not Louclon.
" "Davirica, Hort.
Leaves lanceolate, narrow, three in a whorl, incurved, spreadinf, tapering regularly from the hase to the peint, very sharppointed amd stiff; pale grecen below, and chamelled with a White band on the "pur surface. Branches, rather slender, spreading and elevaterl; lateral ones rather short, and not very thickly chothed with very pungent leaves. Derries ovategrobular, smoth, shinime and nearly black when ripe.

This species grows from thrce to five feet high, with an elevated spmoding head, mather upen in appearance. It is fombl growing in the northern parts of North Anerica, in Labmadnr, Newfomdland, Hudson's Bay, the rocky districts of Newhury and Main, in Greenland, and on the Lstand of Sitcha.

It in frequently confonuded with the dwarf Imiper of Europe (J. nama), lint is casily distinguished from it ly its much narrower, sharper-pointed, and paler folinge, and in its more elevated branches, growing from three to five feet high, while thuse of the dwarf juniper lie flat, or ereep along the ground.

No. ㄹ. Junipleus Cembes, Webl, the C'anary Tsland Juniper.
Syn. Jmiperus, Webbii, Corrière.

Canariensis, Kright.
Leares in whorls of threc, straight, rigid, ercetly-spreading, linear-lanceolate, blunt-peinted, ending in a short prickle, very mumerous and closely placed, especially upon the fertilo brauchlets; the lower leaves are generally ovate-lanceolate, the upper ones linear and sharp-pointed, slightly keeled, mostly straight, seldom concave, and frepuently very glaucous on the upper side, and from three to five lines and a half long,
and three-quarters of a line broad. Branches horizontal, bent downwards at the points; branchlets numerous, short, angular, thicilly clothed with leaves, and of a glaucous green colour. Berries large, globular; nearly smooth, of a decp yellowishbrown colour, covered all over with a glaucous bloom, and with a few tubereles slightly jutting out all round, and from four to five lines long and the same broad.

This kind, according to Mr. Webb, forms a large tree in the warm valleys on the Island of Tencriffe and Canary Islands, with a stem four or five feet in girth; it, however, is subject to graat variation in size and appearance, being found at elevations varying from 1000 to 5000 feet on those islands; at the latter of which elevations it becomes a bush, with its leaves very much reduced in size, and partially imbricated; while in the lower and more sheltered situations it beeomes a large tree, with long, slender, drooping branches and branehlets, little divided, but furnished with spreading distant leaves in threes ; the fruit-bearing ones being covered with small seale-like leaves only one line long. It is found plentiful on the Island of Teneriffe and the Cauary Islands, where the inhabitants call it "Cedro," the Frenclı "Cade," and the Spanish "Enebro."

There is the following variety :-
Jumpeliu's Cedrus bretrfolda, Gordon, the Azores Juniper.


Leaves in threes, somewhat loosely and partially imbricated, linear-faleate, or somewhat oval, more or less rounded and slightly pungent at the aper, very glaucons, and from two and a half to four and a half lines long, and one line broad. Branches very numerous, terete and spreading ; branchlets short, spreading and angularly three-sided. Berries globular, solitary, reddish-brown, and from two and a half to three lines long, and the same broad.

A large bush, from eight to ten feet high, found in the Azores and adjoining islands, and tender in lingland.

This variety differs from the spedice, in having much shorter and more numerous branches and compact branehlets; in the leaves beinto more dense, shorter, partially imbricated, and very glaneous; and in the berries being much smaller, sealy on the top, and of a reddish-brown colour.

No. 3. Jusprerus commivis, Limuers, the Common Juniper.


Lences speading. in whets of three, marow, sham-pointed, awl-shaped and still; grenin on the under and gray on the upper surface, and half an inch or more long. Berries small, roundish, marked on the top with three radiating groover; when young, bright green, but whell ripe of al dark purple or blackish hhe, covered with a glacous: bloom, and continuing for two years on the bush; they are stalleless, and grow from the axil of the leaves; branches spreading and inclining equally on all siles; bank reddisla brown.

This Juniper grows in favomable situations from twelve to eighteen feet high, and is common in all the northern parts of Surope, bnth on hills and valleys, in open sandy plains, or in moist and close woods; on the sides of hills it grows tall, but on the tops of rocky mometains it is only a dwarf-trailing shrub. In England it is chicfly found on upen downs, in a chalky or study sil. It oceurs very generally on the Alps, from east to west, and from the foot to a height of 5000 feet; also on the Apennines at the same elevation as the Alps, and oceurs in the whole of the north of Europe, as far as Lapland, and is found, according to Mr. Benthanu, on the Pyrences. Those plants referred to this species by writers as being found in North K こ

America and Northern India, belong to very different species. The following are its varictics, viz. :

Juniperus commuxis Suecica, Loudon, Swedish Juniper. Syn. Jumiperus vulgaris arborea, Buukin.

| $"$ | $"$ | Suecica, Mriller. |
| :--- | :--- | :--- |
| $"$ | $"$ | fastigiata, Knight. |
| $"$ | $"$ | communis fastigiata, Loudon. |

Leaves spreading, shorter than those of the species, more distant and sharper-pointed. Branches ascending, compressed, and forming a sharp-pointed cone, with a very distinet upright appearance. Berries larger and longer than those of the common Juniper, of a dark purple colour, and smooth.

It is a native of Sweden, Denmark, Norway, and Russia, and attains to a greater size than the common Juniper in those countries, frequently attaining a height of 20 fect.

In the forest of Fontaincblean, in France, this varicty lans attained the height of 50 fect, and produced most excellent timber.

Juniperus communis Hibernica, Lodeliges, the Irish Juniper. Syn. Juniperus stricta, llort.

| $"$ | $"$ | pyramidalis, ILort. |
| :--- | :--- | :--- |
| $"$ | $"$ | Hibernica, Lodldiges. |
| $"$ | $"$ | communis stricta, C'(urière. |

A pyramidal varicty, with creet branches and rather spreading, short, angular branchlets, having its leaves shorter and less pointed than those of the spocies, and with the branches less compressed than those of the Swedish Juniper (J. c. Suecica).

It is a handsome variety, found on the mountains in Ireland.

## Juniperus conmunis Cracovi.1, Loddeiges, the Cracow Juniper:

This variety forms a robust, erect, loose bush, intermediate between the common and Swedish Junipers; found at Clacow, in Poland.

## Jumphrus commenis compressa, Cintriere.

Syn. Juniperus Hibernica compressa, Mort.
Hispanica, Pirst, not Millei.
compressa, Rinz.
communis Hispanica, Lan"sont.
Shecica pramidalis, Monetti.
This variety is casily distinguishel from the Irish Jmiper by its branches being very much shorter, slenderer, and all crect, and forming in conserpence a very straight amb compact pyramil, with the leaves closer tomether along the bramehlets, much shorter; less spreading, and with the bark of the branches much darker in colour.

A small, compact variety, with a dense, pyramidal-shapecd head, foum indigenous on the Pyrences and Apemines, at an clevation of so00 fect.

Ao. 4. Juxiperus confints, Porlature, the (rowded-leaved I muiper.

## Syu. Juniperus littoralis, Muximo.

Leares thickly placed in threes, linear, somewhat threesudel, rigid, openly imbricated, sharp-pointed, and half an inch tonge mul half : line wide ; with the upper side channelled and longitn linally marked with white, and the under one convex and kowled. Berries exactly ghosose, quite smooth, and of a tawh-hrown colour, thickly cowed with a violet glaucons blom, and rather more than one-third of an inch long and the same hroad.

It is fomed at Hakodadi, in Japan, and resembles Juniperns rigida; but differs from it in having the leaves more crowder, groser and triangular, and the berries moch larger.

No. S. Juniperes Drupack, Labill, the Plum-fivited Juniper.
Syn. Arceuthos hrupacea, Autoine.
"Jmiperus latifolia arhorea, Tournefort.
" "majur, Jicllourius.
Leares, in whorls of three, thickly set all round the branches,
rigid, linear-lanceolate, sharp-pointed, spreading, and without any foot-stalks, but slightly decurrent; three-quarters of an inch long, and more than one tenth of an inch wide near the base; but the lower leaves on the branches are shorter, broader, more oval or elliptic, and get regularly narrower, and more linear towards the summit or ends of the shoots, and terminating in a very sharp hard point, slightly concave on the upper side, with a small mid-rib, on each side of which is a white glaucous line, convex on the under side, with a projecting nerve along the back, and of a light green colour. Stem crect, much branching, branches short, spreading, slightly angular, inclining to cylindrical; smaller ones numerous, three-sided, with the ends rather straight ; frnit-bearing ones very short, and thickly covered with short, oval, sharp-pointed leaves pointing upwards. Berries solitary, standing in the axil of the leaves, globular or bluntly-ovate ; one inch long, and nearly the same broad, with from six to nine fleshy seales, disposed vertically in threes, alternately one above another, and hended or run togetlier on the surface, but projecting and very distinet, being divided into distinct spaces of an angular form, deeply divided at the apex, and of a dark purple colour, covered all over with a glaucous violet-bloom, or powder, each fruit containing a single large, egg-shaped, hard, bony nut, parted in the interior into threc divisions, each contrining a single seed, but frequently one of them is abortive; the seeds require two or three years to vegetate.

A large bush or small tree, growing 30 feet high, in the northern parts of Syria, on Mount Cassio and Asia Minor, and called Habhal.

It is quite lardy, and the finest of all the Jumipers.
No. 6. Juniperus hemispherica, Presl, the Globular Jmiper. Syn. J. echinoformis, Rinz.
" "vulgaris fruticosa, C'upuen.
" "Oxycedrus cehinoformis, Van Houtte.
" , nana hemisphreriea, Carmiere. ", "communis hemispheriea, Parluture.
Leaves spreading, very deuse, sharp-pointed, three in a whorl,
whitish above, pale green below, and like those of the common Juniper (J. communis), but mueh smaller ; branches very short, numerous, dense, and compaet, forming a small globular-headed bush, not more than one or two feet high. Berries globular, bright red, and shining.

It is found on the upper barren regions of Mount Etna, a low spreading lut dense bush, at an elevation of from 5000 to 7000 feet. Professor Tenore says it is also found on the mountnins of Calabria.

This very dwarf and singular little Juniper is now frequently to be found in English collectiuns of Conifers, under the name of J. echinoformis, or the Hedreling Juniper, a very appropriate name ; for young healthy plants, at a short distance, look very like in green Hedgehog.

No, 7. Joxtremes macrochrpa, Sibthonp, the large Purplefivited Juniper.

> Syn. J. maximus, Lolel.
> "Lubelii, Guswonce.
> , oblongata, Gusvone.
> ," , Binssolettii, Link.
> ", major, bacea-ccernlea, Tournefort.
> ", "neaboriensis, Lam"son.
> " "elliptica, Ven Moultr.
> ,. ,. umbilicata, Cricuici.
> ". "Wilkommii, Antuinc.
> " "spherocarpa, Antoine.
> " "Attica, Meldreich.
> " "commmis maeroearpa, Spuch.

Leaves spreading, laneeolate, and in whorls of three, broader than those of J. Oxycedrus, and sliarp-pointed, keeled on the under side, two furrowed, and glaucous gray above ; branchlet.s angular and slemer, with the ends rather pendent. Berries very large, obovate, or clliptic, smooth, slining, and of a deep purplish black colour, when ripe, covered with it glaucous violet bloom, like a small Plum.

A large bush, growing from ten to fifteen feet, on all the rocks and sandy coasts of the Mediterrancan, in Austria, Sicily, Grecec, and near Cadiz, in Spain, and on the Barbary Coasts, and Algicrs.

It is quite hardy, and one of the finest.

| No. S. Juntperus nand, Willd., the Dwarf Juniper. |  |  |
| :---: | :---: | :---: |
| " | " | minor Montana, Buthin. |
| " | " | Alpiua Succica, Plukenet. |
| " | " | communis Montana, Aiton. |
| " | " | ," nana, Loudon. |
| " | " | " Alpima, Wahlenb. |
| " | " | Sibirica, Burystorff. |
| " | " | nama Alpina, Endlicher. |
| " | " | saxatilis, Pullus. |
| " | " | Alpina minor, Booth. |

Leaves broad, thick, somewhat adpressed, and incurved, in whorls of three, deep shining green below, glaucous gray on the upper surface, with a green margin, lincar and blunt-pointed, dense, and one fourth of an inch long. Branches numerous, flat, prostrate, the smaller ones angular, rigid, and thickly clothed with foliage, which all face one way, and remain on the branches for years. Berries like those of the common Juniper, but much longer.

A crecping shrub, scldom growing more than one foot high, but spreading to a great distance on all sides, and quite dense.

It is found in England and Scotland, on mountains, on the Alps, seldom below 5000 fect, but up to 9000 fect of clevation, on the higher summits of the Apenmines, and occurs on the Carpathian Mountains, in Lapland as far as the Northern regions, on the Altai Mountains, in Greculind, and the higher mountains of Portugal, and on the Alpine regions and snow line of the Pyrenees. This is a very distinet kind from Jumiperus C'anadensis, with which many writers confound it.

No. 9. Juxiperes oblosgati, Lozulon, the Caucasian Juniper. Syn. Juniperus Caucasica, Fisch. interrupta, Wemerlenul. communis oblonga, Louclon. Cinueasiea, Erullicher. Thuixearpus juniperinus, Truentr:

Leaves in whots of threc, lourg, narrow, rifrid, lance-shapect, acute-pointed, spreading and pointing outwards, bright green on one side, and glanenus gray on the other, distant and without fort-stalks. Branches straggling, very mumerons, and morven upwarde at the points, with the brauchlets slender, bmanehing, and drooping. Berries very small, oblong, in threes roumd the branchlets, without any fout-stalles, of a puplish colnur, covered with a glamenus hoom, and diviled on the top by two or three grooves, ladiating from the eentre, each fruit enntaining either two on three hard, homy seals, in a dry spongy flesh.

A lage stragrgling, many-stemmed bush, growing from three to four feet high, hat covering a large space almor the gromus.

It is found on the sub- M1pince Mountrins in the Western Crucasus, on the Talusch Momentains, in Soutir Westan Russin, and on the Tamrian Mountains.

It is a very distinct and hardy kind.
No. 10. Juxtperes Oxyemmes, lime, the Prickly Cedar, of lave lrown-frated faniper. Syn. Juniperns Monspeliemsimm, label.
" " Oxye drus Phenicea, Durdon.

Lawes dull green, distant, three in a whorl, spreading, very shatp pinterl, lameonate, with two furrows on the upper sidn, amesula below, and nealy the same eolone on both sides. Bhathere furnowed; hrauchlets angular; slemede, and rather prondent at the peints. Bempers romurd, very lamers, smouth, nu:n -rusi, and ehestinut brown, markod with two white lines on the mpex.

A shrub or small tree, inostly with a centre stem, alont ten
or twelve feet high, with rather an open pendulous appearance, the berries of which are used for flavouring gin.

It is found growing on the Apennines at an elevation of 3000 feet, in the South of France, and is eommon in Spain and Portugal, and the countries bordering the Mediterranean, growing on the sea-const.

It is cuite hardy.

## No. 11. Juxiperus Rigidd, Siebold, the Stiff-leaved Japan Juniper.

Syn. Juniperus communis, Thunberg.
Leaves in threes, rather distantly placed, sessile, widely cxtended, rigid, quite straight, very narrow, linear, bluntly threccornered, and with a long, slender, pallid, spiny point; they are channelled on the upper side, prominently and bluntly keeled on the under one, obtuse on the margins, of a pale glossy green colour, and three-quarters of an inch long. Branches terete, widely spreading, and covered with a smooth, light brown lark. Branchlets rather slort, not very clense, prominently and bluntly three-sided, and covered with a yollowish bark. Berries globular, small, sessile, solitary, and of a dark-brown or blaekish colour, thickly corered with a violet glaucous bloom, and produced laterally in great abundance on the short branchlets, which are covered with oval-pointed short leaves. Seeds oblong, angularly compressed, three-sided, and mostly in twos and threes, but sometimes singly in each berry.

This kind forms a handsome small tree, from 15 to 25 feet ligh, on the mountains in the Island of Nippon, in Japan, and is ealled "Moro," or "Sonora Mats" (slender or drooping Juniper), by the Japanese.

No. 12. Juaiperus rufesceas, Linl;, the Small, Shining, Redberried Juniper.
Syn. Juniperus Oxycedrus Taurica, Itort.
" " Taurica, Stricungreays.

Sym. Juniperus Wittmanniana, Fisclur. communis Wittmanuiana, Curriere. Oxycedrus Wittmanniana, Hort.
Leares in whorls of three, rigid, distant, spreading, very shar'p-pointed, dull green, and without foot-stalks, nearly threequarters of an inch long, lanceolate, tapering from the base to the point, with two furrows, slightly glancons on the young foliage on the upper side, and augular helow, but nearly the same colom on both sides, on the adult leaves. Branches spreading, angular, and straight. Bramehlets slender, long, rather stiff, and dull brown. Berries glokular, four-tenths of an inch in diameter, and of a smooth, shining, dull red colour, with very short foot-stalks, and marked on the apex with three white lines, ralliatiner from the centre. Secels three in each berry.

A shrub, or large hush, growing eight or ten feet high.
It is found in the South of Europe, inhabiting the shores of the Mediterranean, along the rocky districts of Spain and France, the samds of Spain, Portugal, Italy, aul (ireece, and the 16 estern lslands, at elevations varying from 1000 to 6000 fiect. It is also found in the Cimeasns, and Taurim Mountains, hut greatly influenced in size and fuliage ly elevation and climate.

So. 13. Juniperts tanirula, Hoolier, the Yew-leaved Juniper. Syn. Jmiperus ublonga pendula, Loudor. pendula vera, Hort. commmnis pendula, Hort.
Leaves in whorls of three, linear, slightly roumded at the point, rigid, mrealing, upper side hollow, two furrowed, and ghucous, the meder one smooth, dark green, with a strong clerated rill along its centre, terminating in a blont point, and without any foot-stalk. Branches fuw, seattered on the stem, rather spreading, antl penduluus at the ends, smatler ones
augular, pendulous, and but little forked, flexible, and of a dull yellow colour, Berries very small, solitary, globular, smooth on the surface, and of a glaueous violet colour when ripe, nearly sessile, or on very short branchlets, imbrieated with oval-pointed short leaves.

This kind forms at handsome pendulous bush, from eight to ten feet liigh, and is a native of the Island of Loo-Choo and the north of China.

It is quite hardy.

## Section II. SABINA. The Sayin Jumipers.

Leares, in opposite pairs, mostly anl-shaped, slightly divergent, and loosely imbrieated in the adult plants.

Berrics, mostly very small, and numerous.
No. 14. Juniperus Bermudiana, Limnceus, the Bermuda, or Peneil Cedar:
Syn. Juniperus oppositifolia, Mönch.

$$
\text { " } \quad \text { " Cedrus Bermudic, Ray. }
$$

Leares of two sorts, cither in pairs, opposite, and very much drawn together along the sloots, or in whorls of three, spread open and needle-slaped, very dense, nearly half an ineh long, tapering from the base to the point, rigid, smooth, narrow, and quite straight, chamuelled above, and glaueous, slightly keeled, and without any gland on the under side, light green when young, but much darker when old, and seldom growing on the under part of the branches. The other form, which is that of the bery-hearing kind (female), has the leaves on the mature plant, in opposite pairs, short, elosely drawn together along the brunches, imbricated, and not so dense, ovate-lanceolate, and in four rows. Stem erect. Branehes spreading, and furnished with a great number of smaller ones, eompletely eovered with leaves. Berries small, globular, solitary on the ends of the hranchlets, and of a dark brown colour, inelining to purple when ripe.

A pyramidal dense-headed tree, with the lower brancles rather spreading, and attiming a height of forty or fifty feet, in the Islands of Bermula, the Canary Islands, and Barbadoes.

This is the tree which furnishes the wood from which cedar pencils are made.

It is not hardy in England.
No. 15. Jusmerts Daveriea, Pelles, the Damian Juniper.
Syn. Jmiperus fertida davarima, syetell.
The leaves are of two kimhe, and cither oppocite or in threes, and differ in the different sexer- those on the male plant are very small, deemrent, closely imbricaterl in four rows, convex on the back, with an ohbong flam in the centre, and a short peint; while throe on the female plant are in threes, lincar, awl-shaped, çuite open, sprealing, sharp-pinted, and thickly placed along the branchlets; they are chamelled and whitioh on the upper part, convex on the back, and mostly furninher with it linemr-shaped grand in the centie, amb, when fully expambed, a guarter of an inch long. Dianches terete, forked, and wile-spreading. Branchlets somewhat long, slender, quidriform, much exteuled, or somewhat pendulons, ant! chacly cowered with imbricated, ovate-rhomberid leaves in fome rows. Berries small, solitary, lateral, somewhat globmar, or subturbinate, very bitter, and of a hackish colom when ripe, coverel witha riolet slancous hhom, and two lines in diameter: S'eds ovate-oblong, ind mustly single, lut frequently in twos ami threes in the same berry:

A low, decumbent shul, with the sexes on different plants, found on the Altai and Damian Mountains, in Siberia. Tho kime frencrally known in collections unter the name of J. Danlica, is the satme as J. Cimadensis.

> No. 16. Juximutes mins., Gordon, the Dense or Bushy Indian Juniper.

Syn. Juniperus recurva densa, Hon\%

$$
" \quad " \quad \text { nania, Mort. }
$$

Syn. Juniperus communis Indiea, Madden.

$$
\begin{array}{cccc}
" & " & " & " \\
" & " & " & " \\
" & \text { nana, Madden. }
\end{array}
$$

Leaves in whorls of three, half-spreading, lincar-lanceolate, very acute, pungent, of a pale yellowish green, and about the third of au ineh long. Berries solitary, the size and shape of a small pea, dark blue, covered with a glaucous bloom, extremely resinous, aromatic, and mostly three-seeded; with three divergent furrows on the apex, conneeted at the extremities by an elevated seale, and thus forming a kind of platform on the top, with three lateral seales lower down the sides of the berry. The whole plant emits an execedingly strong turpentine, or resinous smell, when bruised, and the berries ripen from August to November.

This is the Indian Juniperus communis of Major Madden, in his observations on the Himalayan Conifere, and the "Better," "Betr," "Bytr," and "Bectur," of the Bhotiyas; all vernacular variations in their dialect for yeast, or yielding yeast. In Kaman it is called "Pumaroa," and, according to Dr. Jameson and Capt. Strachey, it is found near Bumpa and on the high mountains behind MInlaree, at from 9500 to 10,500 feet of elevation, but penetrating into the heart of the snowy mountains to 14,000 feet. It is also found plentiful on the Bhotan Alps, near the Netce Pass, forming a dense diffuse bush, from three to six feet high. Major Madden found it in abundance on the Glacier Mloraines, west of Mama, at 12,000 to 13,000 feet of elevation, where it is known to the Bhotiyas as "Churpinja." It was also found on the soutl face of the Wyrung Pass in Kunawur by Dr. Hoffimeister, at an elevation of from 11,000 to 12,000 fcet, and Capt. Hutton found it on the Roo-Nung Palss; while its easternmost known position is at 10,000 feet on the Cheto Binaik, at the south entrance to the Alpine valley of Byans, where the Bhotiyas call it "Lhala." In Joohar it occurs on the higher mountains, at clevations of from 11,000 to 13,000 feet, where it is designated "Checehia" by the the hill people. It is much used in temples as incense,
where among the apparatus used are censers, filled with the burning embers of this Juniper, which are muffled about and put through many evolutions amidst the ceremonial mummeries, by the priests; while on the other hand, the Bhotiyas, who are somewhat careless in such matters, and look sharply to this world, and things substantial rather than spiritual, pay little attention to this Juniper, except for the niseful purpuse of making yeast, and for which purpose the fruit is sohl in the Indian Bazains, under the name of "Uthul" and "Hoobsair:" It appears to be unknown on the Indian deelivity of the Hinalayas, and is a very distinct species, growing from three to six feet high, somewhat resembling Juniperus squamata, but not so wide spreading, and much taller in habit, and readily distingushed from that kind, and Juniperus recurva, hy the pale yellowish-green tint of its foliage, and small three-seeded berries.

It is quite hardy; and frequently to he fonnd in the nurseries, misuamed Juniperus recurva densa, a naune previously applied to the male form of the Juniperus recurva, but from which our present plant is casily distinguished by its dwarf, dense habit, and small, threc-seerled fruit, white that of Juniperus recurva hais but a single seed in each berry.

Nu. 17. Jusiberes rexclesh, Biehrestein, the Tall Crimean Juniper.
Syun, Juniperus Sabina Tauica, Pullus.

| , | " excelsa, - intoiur. |
| :---: | :---: |
| " | polyearpos, Antuine. |
| " | isophyllos, Antoine. |
| , | isuphyllos, Kotishy. |
| " | polycarpos, Fotschy. |
|  | Olivicri, Camiere. |
|  | fretida excelsa, Spach. |
| " | execlsa vera, Hort. |

" Cudrus Orientalis fietidissima, Tournefor\%.
Leaves in twos, very small, glatueous gray, sharp-pointed,
loosely imbricated, and spreading at the points on the young plints; but short, thick, ovate, inlbricated, and four-rowed, with a sunken gland at the baek of those on the old plants. Stem crect, thickly covered with numerous short compact brimehes, curved upwards towards the ends, and densely clothed with foliage; branchlets obtusely four-sided, straight, and rather rigid. Berries globular, slightly angrolnr, half an inch in diameter ; when full grown, of a deep tglaucous purple, solitary, and on the ends of very short branchlets.

A handsone pyramidal sinall tree, growing 30 or 40 feet high, with the lower branches rather drooping when old.

It grows on the Islands in the Crecian Arehipclago, Tiuria, Syria, Armenia, and between Teflis and Erivan ; also in Persian Armenia, and Ceorgia.

This kind is not found indigenous, cither in Tndia or North America, as stated by Mr. Loudon, in the Arboretum Britannicuin; the American Juniperus excelsa of Lewis and Pursh being the Juniperus Occidentalis of Hooker, while the Juniperus execlsa of Indian writers is the Juniperus religriosa of Royle, and both very distinet from the Crimean kind.

Juniperius excelsa stricta, Rollisson, the Upright Tall Juniper.

| Syn. Juniperus excelsa glauca, Hort. |  |  |
| :--- | :--- | :--- |
| " | Perkinsii, IFort. |  |
| $"$ | $"$ | venusta, Hort. |
| $"$ | $"$ | stricta, Hort. |

This beautiful variety forms a tall, dense, narrow, conical head, tapering gredually from the ground to a shaup terminal point; and is of a fine silvery glaucous colour. It originated in the nurisery of Messis. Rollisson, at Tooting, and is quite hardy.

Jumiperus excelsa variegata, Curvière.
A very striking variety, with variegated leaves and branchlets, of Freneh origin.

No. 18. Juniplaus flaccida, Schlecht, the Loose-growing Juniper.
Syn. Juniperus footida flaccida, s'pach. gracilis, Eudliche:
Leaves of various forms, some opposite and in pairs, others in whorls of three, spreading at the pointw, needle or lanceshaped, very suall and peinting upwards ; three-quarters of a line long, with frepuently an elon rated arland on the back of the small, round, and closely imbricated leaves, on the smaller lranchlets of the adult plants; those on yomig plants are apreadins, straight, much longer; lance-shaped, and hright aneen on broth cides. Branches maked towarts the base, slender, hemiantit, dropping at the peints, and covered with a shooth, gray inh-hrown hark; branchlets numerous towards the end of the bramehes, four-sidud, pliable, spread out, montly growing on one sidr, and pendulous. Berries large, glohnlar, onlitary, and halt an inch in diameter; with projecting, thin, acute-pointed scales, and of a deep purple colom, covered with a glateons bloom.

A gracefol, louse-spreading, pramidal bush or small tree, growing from 20 to : :0 feet high, with a drooping apmeance.

It is fomd on the mountains of Atotonileo el Chicn, Recria, and Real del Munte, in Mexien, at elevations of from 6000 to soou feet, where it produces Sindarac, but in much smaller glmantity than the Mexican Juniper (J. Mexicama).

It is very distinct and tolerably hardy:

## Nu. 19. Juxiplecs Pseudo-Sabras, Fischer, the Siberian

 Savin.The leaves are of various forms and sizes, on different parts of the plant ; thase on the primary branches and intermediate branchlet.s are open, .preading, subulate, rigid, straight, thickly placed in threes, or in opposite pairs, chamelled and glaucous on the upper surface, rounded on the back, spiny pointed, and two lines long; while those on the external fertile branchlets
are very smail, ovate, somewhat obtuse at the apex, coneave on the back, with a sunken gland in the centre, and closely imbrimeded in four rows. The principal brancles are rather long, and obliquely extended, with the lesser ones and intermediate branchlets short, numerous, thickly placed, and covered with open, stiff, spiny, awl-shaped leaves, mostly in threes; fertile branchlets short, slender, much forked, and cylindrical, or somewhat quadriform by the small, closely imbricated leaves. Berries solitary, terminal, ovate, or oblong, smooth, nearly black, half an inch in diameter, and containing one large ovate seed.

A low-spreading, dense shrub, three or four feet high, and somewhat resembling the common Savin, but destitute of the strong odour of that kind.

It is found in Siberia, on the Songarian and Baical Alps, and on the Altai and Daurian Mountains.

No. 20. Juniperus prostrata, Pcrsoon, the Prostrate-branched Juniper.

| Syn. Juniperus repens, NTuttall. |  |  |
| :---: | :---: | :---: |
|  | " | Hudsonica, Lodd |
|  | " | Sabina prostrata, Loudon. |
| " | " | humilis, Hoolicr. |
|  | " | horizontalis, Mronc |
|  | " | Alpina, Louldiges. |
|  | " | footida multicaulis, Spach |

Leaves in twos, alternately opposite, very short, loosely placed over each other, and irregularly four-rowed, very dense, concave above, convex below, and terminating in a very sharp point, stem-clasping, dull shining green, and with the ends pointing outwards and quite free. Stems prostrate, long, slender, laying flat on the ground, flexible, and spreading; smaller ones short, dense, alternate, straight, and thickly placed on the upper side of the branches. Berries small, globular, or oblong, tubereulated, and when ripe of a glaucous black or blackish violet colour, on short branchlets, and solitary.

A proitrate shouh, trailing along the gromed, and not rising more than six or eight inches high, but spreading over a large space.

It is found in the United States of America, on the sandy beaclies of Lake Huron, and the hills along the Missouri Riser, near Fort Mandan.

No. 21. Junipfru's rectrva, Dom, the Drooping Indian Juniper.
Syu. Juniperus incurva, IIamilton.


This is callerl "Arou," and "Uyyroo," (Eaghe's Bush), in Nepal, probally from its groming among the rocks where the eagles resort.

Learen in threes, linear-łanceolate, hristly-pointed, loosely imbrieatal, and convex beneath. Branches and branchlets meurvel, pendulous, not reyy mmerous, and easily distinguished from all the other Indian quecies, by the persistent chaffy leares of the phat year, and by the mixture of the brown half-decayed chatly ones of the past year with the greenish-gray ones of the present. Bark rough hrown, curling up and sealing off. A bush, or low tree, very graceful in habit, growing from four to ten feet in height. It is fomme in Cossainthan, in Nepal, and in Bhotan, at an eleration of from 8000 to 10,000 feet, a small, but elegant tree; and in higher elevations, only a scrubby bush. Berries roundish oval, deep purple or nearly black when ripe, with a shining smonth surfice ; each berry contains only one sed. The berries and hranches are burnt as incense in temples, and in other magical inctutations, by the natives.

The sexes of this species are on different plants, and both very dissimilar in appeatunce; the male has longer and looser foliage, and a denser appearance; while the femate form has much shorter and more clusely imbricated, thee-rowed leaves, and a slenderer appearanee; the female form is that which is most common in collections.

1. こ

No. 22. Juniperus religiosa, Royle, the Pencil, or Incense Juniper.
Syn. Juniperus excelsa, Madden, and all other writers on Indian Conifers under this name.

Leaves closely imbricated in opposite pairs, somewhat oltuse, with a central gland or raised line on the back, four-rowed, and imbricated, or spreading, acute, and disposed in threes; glaucous and subulate on the young plants, but both forms are frequent. Branches and branchlets very similar, but more compact than those of Cupressus torulosa. Berries of a purplish colour, the size of a small pea, rounded or two-lobed, smooth, and with only one or two small seeds in each, dry, resinous, and with a strong aroma when bruised, and very disacrrecable taste. Male ind female flowers on separate plants.

This species is rarely found below 10,000 feet of elevation, and gradually dwarfing into an Alpine ereeping slurub at 12,000 or 13,000 feet; but ascending in this form to 13,500 feet on the south flank of Kunchinjinga, and to 15,200 feet on the rearward ranges. It forms a large, densely-branched, stiff tree, growing from 60 to 80 feet high, in eastern Nepal. Major Madden saw a tree at the Songnum Temple, thirtcen feet in cireumference at five feet from the ground, and about 100 fect high. Captain Strachey found it at "Hunu," 12,000 feet above the sea; but it is found in many parts, particularly at Kimawur ; on Ciossainthan, in Nepal; in Kamaon, near Nantec; and appears to flourish best at elevations of from 9000 to 13,000 feet, but never below 7000 feet in in mative state.

Dr. Griffith found it in Bhotan, about temples and in woods, from 9000 to 11,000 feet of clevation. In "Kooloo," at an elevation of 11,000 feet, it is preferred for its timber, and its sprigs are burnt for incense. It is commonly planted by Buddhist temples, where it is used in all saered ceremonies, heuce its specific name, "religiosa;" the name commonly applied to this tree (excelsa) by writers on Indian Conifers having been
previously applicd to a C'rimean plant, now common in English collections. The natives of Durii, in Gilgit, on a particular day, burn goats' fat and Juniper lramehes npon the altar, and dance, sing, and drink wine; they also fry Juniper branches and herries in oroats grease, in small dishes, for incense. Nr: Winterfontemen foum it on all the elevated tracts of Lotor amd Gilgit, even in the north-east quartere of cashmere, nsed for the same purpose under the mame of "Lewi," or "Newr" (Jumper), and "Dhoop" (incelnse). It is also found in the north-west of Sikkinn and Nepal Proper, where it is called " (Googral I)honp," and alway: burncal in temples as incense on frestive days. It has scaly hark, of a deep brown colomr, and timber exactly similar to that used in C'edar pencils, with a seche cyually aromatic.

This .Jmiper is called "Shitkon," or "Shirgoo," in Kamaon, and "Shwor," "Shoopa," "Shookpa," and "Chopka," nll vernacular variations in the Bhotn lialeets tin inemse, or used fur that Irupose. It is alsu the Jumper Cedar of Indian trawell res, who de-cribe it as a large, dark, dense-branched, stiff tree, growing in castem Nepal, from 60 to 80 feet high; while in Sikkim it only attains at height of from lis to 20 feet, med at all rery high and extreme clevations it becomes a creeping shruh or sprawling hush. Tlimler red, cluse grained, and exemp from the ravages of insects.

The limalayan Cedar woold, so called, or miscalled, by Dr. Reyle, is the timber of Juniperns retigiosia (the J. exeelsa of Inctia), and not that of Sanscrit record, which latter is that of the Deorlar Cular. Ite also confounds Juniperus religiosa with Cupressus torulusa, and states that Cupressus torulosa grows at an clevation of 11,500 feet in Kmawne, on the boyders of Chincse 'rartary-a statement totally fallacious; for c'upresisus torulosa has never been found in any part of India above T 000 or soot feet of elevation, and generally very much dwarfed or stunted in such situations; while, on the other hand, Juniperus religiona (exerlsa of Indian writers) is achlom in crer fomm helow !0no or 10,000 fuet, in a mative
state, but up to 14,000 or 15,000 fect on the rearward ranges where it becomes a creeping Alpine shrub, although at an elevation of 9000 or 10,000 feet it is a large tree, from 70 to 80 feet high.

It is perfeetly hardy, and resembles J. excelsa, but it is more open in the head.

No. 23. Juniperus Sabina, Limeuzs, the Common Sarin.

| Syn. Juniperus Salina cupressifolia, Aiton. |  |  |
| :--- | :--- | :--- |
| $"$ | $"$ | cupressifolia, IIort. |
| $"$ | $"$ | Sabina horizontalis, Hort. |
| $"$ | $"$ | vulgaris, Encllicher. |
| $"$ | " | Lusitaniea, Miller (not of others). |
| $"$ | $"$ | Lyein, Pallas not Linnceus. |
| $"$ | foctida Sabina, Spach. |  |

Leaves in opposite pairs, imbricated, oval, somewhat pointed, and convex on the back, or awl-shaped, and remote. Branches nearly straight, very much ramified, younger ones entirely covered with imbricated leaves, which have a rery disagrecable odour, and very bitter taste. Berries of a blackish-purple colour, generally one-secded, small, oval, smooth, and about the size of a small currant.

A low, much-branched shrub, but sometimes growing six or seven feet high on the Lower Alps in Sonthen Europe. It oceurs in the mountains of Tombardy, in the Apennines, on the Pyrenees, in Grecee, on the Spanish Peninsula, but always as a mountain plant. It is also very abundant on the northern and western slopes of the $\mathrm{Al}_{\mathrm{l}} \mathrm{s}$, on the Altai and Taurian mountains.

Juniperus Sabina nana, Hort, the Green Carpet or Dwarf Savin Juniper:
Syn. Juniperus Sabina pumila, ITort.
" " prostrata, Risso, not Torrey.
" " elegans, IIort.

This variety is very mueh smaller, more spreading and flatter than the common Savin, and rises but little from the ground. It is the Green-C'arpet Juniper, and is not unfrequently confommed with the (irey-Carpet Juniper (Juniperus Sabinoides.), to which it bears considerable resemblance, except in colour. It is found on the mountains in the sonth of Eirrope.

## Juniperus Sabina vhrifgata, Lomelon.

This varicty differs from the ordinary Savin in having some of its branchlets and foliage pale-yellowish white, intermixed with the green ones, and forms a very pretty variety.

No. 24. Jumperes Sabinoides, Endlicher, the Grey-Carpet Juniper.
Syn. Juniperus Sabinat tammiscifolia, Aiton.


Leares in opposite pairs, the lower ones spreading, almost medlo-shaped, rery short, glaueons, blut on the upper side, homadest at the hase, tapering to a very sharp point, half opened, and spread outwards, but on older plants much more approaching together, smaller, scale-formed, loosely imbricated, and sharp-pointed. Branches spreading out horizontal, very dense and stifl; branchlets very numerons, straight, short and tufted. Berries quite round, of a blackish violet colour, one-seeded, larger than those of the Common Sarin, and a little flatter, and mure glatucons.

A dense little bush, spreading out horizontally, and not more than two or three feet high, found in Spain and the mometains of Southem Europe.

No. 25. Juniperus squamata, Don, the Sealy-leaved Nepal Juniper.
Syn. Juniperus squamosa, Humilton.

| " | dumosa, Wallich. |
| :--- | :--- |
| $"$ | L Lambertiana, Wallich. |
| $"$ | " rigida, Wallich (not of Thmberg). |
| " | ? Wallichiana, IFooker. |

Leaves in threes, closely imbricated, ovate-oblong, more or less acute, inflexed at the point as if obtuse ; the withered ones persistent, with very long points, and adhering to the branches like seales. Branches numerous, erecping, and a little set up at the points; branchlets stiff, very numerons, and thickly covered all over with foliage. Berries ovate-obtuse, or ovateoblong, very glossy, varying from light-blue to nearly black, one-seeded, with three or four opposite seales about the centre, and two small ones near the top, which is umbilicate and furrowed; on old plants the upper branches have elosely-imbrieated, eypress-like leares, while on the lower branches of young plants they are in whorls of three, linear and lanceolate, acute, stiff, more or less spreading, green on the upper side, white below, but varying in some so as to leave both sides of the foliage bright green.

A large, dense, prostrate, much-branched shrub, growing two or three feet high, in Nepal, and on the Bhotan Alps. In Cashmere and the adjaceut regions it is common at all clevations, particularly on the Indian face of the Himalayas from 11,000 to 13,000 feet. It is also common on the snowy ranges of Kamaon and Gurhwal, and penctiates into the heart of the Himalayas, to "Rimkin," at an clevation of 14,500 fect; its upper limits is 15,000 feet, and its lowest 9,000 feet, lont is in greatest abundawee between 12,000 and 13,000 fect. It also grows on the Choor momatains, where it forms extensive beds, orerlaying the high, tabular masses of granite, which ocenr on or near the top, at an clevation of 12,000 fect, where it has the form of a large erecping bush, covered with its large, glossy,
purplish-black fruit, which is well tasted, having but little bitter in them, and a simgle seed. It is the "Pama," or "Pudma," of "pprer Kimmonand the Himalayas, and the "Googgral" of (Cishmere, a word meaning incense, also the bastard or creepiner Cedar of travellers.

The Bhotiyas call this species "Parpinja" (creeping Juniper"); and, according to De. Hoffineistor, an intoxicating lrink is prepated from the beries of the gromel-Jmiper, which is known all over the Busehur part of the Himalagas by the name of "Theloo," (spirituons liquor"). Its Khasiya names are "Bhedaua," and "Bindlara," and signify yeat, or yielding yeast ; for which purpose the sprige are used in Lpper Kamaon in the preparation of yeast, as the aromatic eruthed berries of the common. Juniper is in Europe to llarour rim. The yeast is made by moistening coarse barley flump, which is made into a ball, and covered all romed with the leaves and spries of this Juniper ; the whole is then dosely watpeed up in a blanket, anm kept warm, where in then or fonr dias it ferments and hrecomes fit for mse. It is also nsed in the distilliug arrack from riee, the berries having lat little bitter in them.

No. ifi. Junplere thurifera, Limucus, the Spamish Juniper.


Leaves in twon, ollmsitr, very small, narow, glaucons-gray, buncly inlrimatem, in four rows, sometmes spreading at the pmints, rigit, straight, and sharp-puinterl, concase at the bare on the upper simp, comex at the back, stem-clasping, amel mostly without any glame on the muder side; stem erect. thickly eovered all romme with hanches, emred upwands at the points; hamethets roy dimbe, shont, all growing on the ruter side, envinóo upwarls, aml forming a dense pyamilal
head, tapering to quite a point at the top. Berries very large, solitary, obovate or egroshaped, glaucous-black when ripe, reddish brown when immature, and bright green when young, and growing at the points of the smaller branchlets, which are entirely covered with small imbricated laves.

A very handsome, dense, pyrumidal, small tree, branching to the ground, and tapering to a sharp point, and attaining a height of from 20 to 30 feet.

It is found on the mountains in the province of Seville, in Spain, and in Portugal, at an elevation of from 3000 to 4500 fect above the sea.

It is iluite hardy.

No. 27. Juniperus Virginiana, L., the Virginian or Red Cedar.
Syn. Juniperus arboreseens, Manch.

| " | " | Caroliniana, Hort. |
| :---: | :---: | :---: |
| " | " | Virginiana vera, Loddriges. |
| " | " | ulgaris, Cumière. |
|  |  | major Americana, $P$ a |

Leaves in twos, opposite, and four-rowed; but frequently in whorls of threc on the young shoots, those on the adult plants elosely imbricated, very small, and sharp-pointed; but afterwards, as they get older, beeome spread out at the points, glossy and of a light green, in the common form of the tree, frequently turning to a tawny brown colour in winter. Branches horizontal, numerous, close together, and feathered to the ground; branchlets four-sided, slender, straight, spreading, and very numerous on the outer parts of the branches. Berries dark purple, very small, ovate, smooth, or slightly warted on the surface, and coverod with a white glatucous powder. Male and fomale flowers mostly on the same plant, but sometimes on separate ones.

A handsome tree, growing 40 or 50 feet high, and one foot and a half in diameter.

It is found abundantly in the United States of Ameriea, on the ('elar 1.laml in Lake Champlain, and in the district of Maine, from whenee it speals without intermission to Cape Fincidid, and thence round the (inlf of Mexien, a distance of more than 3000 miles; in Virginia and the more Sonthern States, it is enmmon, but is only seen in the form of a shrul, in the open, dry, samly soils of the Western States.

There are the following varieties :-

## Juniperes Virgintana Carolindaji, Loddiges, the Carolina Red Cedar.

Syn. Juniperus Caroliniana, Du Roi.

| , |  |
| :---: | :---: |
|  |  |

A fine, upright varicty, with a compact halit, and leaves moreor less ppreading, acernse or lanceolate, decurent, seattered, and glancous on the npper surface. Berries very small, oval and of a violet colume when ripe.

A desimale variety; on account of its might labit.

This vanity lass much slemberer branches, which are refleeted at the extremities, and fremently dronping; banchlets very mumpous, long, straight, slim, ami fre quently pendent. Leaves in oppwite pairs, or in whols of theec, needle-haperl, straight, barow, and shanp-pinted an yonng plants; lut very shost and blunt-pointed on those of the adult plants, and clocely imhluieated.

A tree growing 50 or Gn fect ligh, with a trank one foot and a half in diancter.

It is found in the Island of Barbadoes, and other Windward Islands, but has been widely distributed by the Loddiges under the name of Juniperus Gossainthanca, a name evidently originating in carclessness, for no such plant is to be found in that part of India, as is evident from the writings of such excellent and aeute observers as Miajor Madden, Mr. Winterbottom, and Drs. Wallich, Hooker, and Griftith ; for if such a tree existed in Gossainthan, it ecrtainly would have been detected by one or other of those excellent travellers.

It is rather tender.
Juniperus Vimginiana dumosa, Loddliges, the Bushy Red Cedar.
Syn. Juniperus dumosa, Hort.
A bushy variety of the Red Cednr, with a roundish spreading, but compact head, widest at the top, and with the leaves cither rery acute-pointed, spreading and straight or scale-formed, and closely imbricated in four rows.


This variety only differs from the species in having its foliage of a fine glnneous white colour.

Juniperus Virginiana humilis, Ifort, the dwarf Red Cedar. Syn. Juniperus Virginiana pumila, Hort.
This is a very dwarf, slender variety, of a pretty purplish tint, and with the shoots branching out in a peculiarly angular form.

A very attractive and distinct variety, forming a dense bush, only two or three feet high.

Juxiperus Virginiata pexdula, Hort, the Weeping Red Cedar.
Syn. Juniperus Virginiaua Chamberhaini, Ifort.
There are liree forms of the pendulous Red Cedar to be found
in collections; one the mule form, another the female one, and the third a bright-green one. The male kind has shorter and nuch more numerous branchlets, while the female one has longer, slenderer, and much fewer branchlets; the third variety is of a beautiful light glossy green, and the handsomest of the three. The femate form is generally known in collections as Chamberlain's Weeping Red Cedar, while the green one is called Juniperus Virginiana pendula viridis.

Juximmes Vimiminisi Somomti, Hoit, the Light-green Virginian Cedar.
Syin. Juniperus Schottii, /Iort.

$$
\begin{array}{ccrl}
" & " & \text { Virginiana virinlic, } \text { I/ ort. } \\
" & " & " & \text { stricta, } \text { IIort. }
\end{array}
$$

A fine pramidal varicty, diftering principally in ito peculiar bright green eulom:

Juxpmatis Vhbinhana trabartita, $R$. S'miff, the Tripartite Red Cedar. syu. Juniperns tripartita, $/ 10 \%$.
A low sprealing hish, from three to four feet high, with several stems, and yuite the habit of growth of the common savin; the leases are mostly open, very acute and staight; but frequently thase on the fortile buachlets are seale-formed, and closely imbrieated.

A very distinct kind, of continental origin, and quite hardy:

This variety hat whitish leaves and branchlets, intermixed with the ordinary green ones.

Juxipertis limginhasi aumea, variegata, Hurt.
This variety has a portion of the branchlets of a fine gelden yellow, scattered all over the plant.

Seetiun III. CUPRESSOIDES. The Chpress-hike Juntrers.
Leaves, in opposite pairs, four-rowod, small, scale-formed, aml closely imbricated in the adult plants.

Fruit, more or less angular, and furnished with external bracts, or humps.

No. 28. Juxiperus Chinexsis, Limncues, the Chinese Juniper. Syn. Juniperus dimorpha, Roxburgh.

$$
\text { " } " \quad \text { dicecia, Makioy. }
$$

This species has the male and female flowers on separate plants, and are very dissimilar in appearance.
A-Male form.
Juniperus Chinensis mas, Linnceus.
Syn. Juniperus Thunbergii, Hooker:
" " $\quad$ dicceia, Moloy.
" " dimorpha, Roxburgh.

Leares in whorls of three, lance-shaped, sharp-pointed, channelled on the upper side, and convex below, sometimes very glaucous or bright green, spreading, distant, stiff, and without iny footstalks, densely clustered on the smaller stemshoots and bottom branches. Branches irregularly alternate, and thickly placed on the stem, mostly pointing outwards, and spreading, smaller ones straight, very thickly placed on the lateral branches, and thickly covered with male flowers, of a bright yellow colour.

> B-Female form.

Juniperus Chinensis formina, Limucus.
Syn. Juniperus Reevesiana, IIort.

| ". | flagclliformis, liceres. |  |
| :--- | :--- | :--- |
| $"$ | $"$ | struthiacea, Innight. |
| $"$ | $"$ | fcemina, Hort. |
| $"$ | $"$ | cemua, Rowburgh. |

Leaves in twos, opposite, closely imbrieatecl, very short, scalc-formed, ovate, slightly pointed, closely pressed over each other in four rows, stem clasping at the base, with an oblong sunken gland on the back, and pointing in the same direction
as the shoot. Branches seattered, but thickly placed on the stem, pointing outwards and spreading; smaller ones slender, four-sided, partially rounded, seldoin forked, and frequently pointing duwnwards. Berries very small, of a glaucous violet brown when ripe, and variously shaped, in some rounded, twolobent, or mugular; others globular, or oblong, depressed on the surface, and mostly containing only one or two beeds in each.

The open leaves are frequently alike on both sexes whon joung, and frequently on the smaller stem-shoots and bottom branches of the female pliunt; white the mature leaves on the outer and upper bramehes of the male plant become like those of the female, small, closely pressed over each other, and stem clasping.

This very fine species attains a height of from fifteen to twenty feet, particularly the male form, which is much the haudsomest plant, with a pyamedal heal.

It is fomed abumantly in Chima, Japan, and adjoining islands, and is perfectly handy:

This kind is called "Fi-noki-suga" (slemder evergreen) ly the Japmese, and "Imaki" (wild or native shrub) by the Chinese. There are the following varieties:-
Juniperu's Ciminensis deasata, $l$. Sinith, the Dense-growing Juniper.
Syn. Jmiperus Wallichii, Hort.
This kind forms a dense pyramidal slurub, from tou to twenty feet high, with the main stem upright, and all the numerons branchlets more or less pendulous, and closely imbricated, with elliptic-pointed, glosay bright-green leaves.

It is a mative of the Himalayas, and quite hardy.
Junireiles Chinesisis varmeata, Fortune, the Variegated Chinese Jımiper.
Syu. Juniperus Chinensis argentea, Ifort.
This variety diflery from the species (male form) in being of a beautiful ghamenis green, regularly interspersed with branchlets of a silvery white colomr. It is of Japanse origin, and was first introduced by Mr: l'ortune.

Juniperus Chineasis aurea, Rollisson, the Ciolden Chinese Juniper.
This is a fine varicty, with a portion of the branchlets of a bright golden yellow.

No. 29. Juniperus Japontca, Carriere, the Japan Juniper:
Syn. Juniperus procumbens, Sicbold.
Chinensis procumbens, Encllicher:
Leaves in whorls of three, thickly set on the branches, speading, rigid, and tapering to a sharp prickly point; straight, smooth, bright green and convex, with hardly any trace of the mid-rib on the under side; chamelled with two glaucous lines on the upper one, while those on the outcr branches in the adult plants are very small, ovate, blunt at the points, closely imbricated, and three-sided. Branches spread out, numerous, twisted, and frequently bent downward at the ends; smaller ones very dense, short, rigid, and covered at the ends with small closely-imbricated leaves. Berries small amd solitary, at the points of the small lateral branchlets, irregnlarly egg-shaped, gibbous, and sometimes two-lobed, containing from one to three seeds in each, and of a very deep prople, covered with a glateous powder, before and when ripe.

A sinall clense-spreading bush, not growing more than one or two feet high, found plentiful on the monntains of Japan.

It is quite lardy, very distinct, and has the following varicties:-

> Juniperus Japonica aurea, Fortume, the Colden Variegated Japan Juniper:

This varicty differs from the ordinary form, in having a good portion of the secondary branches and branchlets of a golden yellow colour, and when well intermixed, forms a very striking object.

## Juxiperus Japonica alba, Standish, the White Variegated Japan Juniper.

This is a very nice variety, with a portion of its lesser branches and branchlets, of a white colour; first introduced from Japan, hy Mr. Jolm Standish, of the Royal Nursery, Ascut.

No. 30. Juxiperus Mexicava, Schlecht, the Mexican Sandarae Juniper.
Syn. Juniperus Deppeana, Steudel. gigantea, Roerl.
" Cupressus Sabinoides, Irumboldt.
Leaves (on tho adult plants) in opposite pairs, very short, three-fourthis of a line long, ovate-pointed and loosely imbrieated; but ovate, blunt-pointed and closely imbrieated on the suall branchlets, four-rowed and marked on the back with an elliptic gland, and of a dull grayish colour. Leaves (on the young plants) mostly in threes, round the brauclies, sharppointed, needle-slaped, rigid, spreading, loosely imbricated, nud dull glaucous green. Branehes angular, horizontal, slightly elevated at the ends; smaller ones covered with sharp-pointed, sealy leares, extended at the points, and with an clevated gland at the back; branchlets four-sided, rather cylindrieal, short, stiff, and straight. Berries solitary, on short scaly footstalks, half an ineh in diameter, irregularly globular, with a few gouty humps, or tubercles, terminated with very thin seales on the outside, and of a dark purple colour, dusted over with a glaueous powder.

A tree commonly found growing from 20 to 30 feet high, with a pyranidal-shaped head, produeing a pale yellow resinous matter, frequently found in drops or lumps on the branches and resembling sandarae.
M. Roezl descrikes it as a magnificent tree, growing from s() to 100 feet high, and nearly three feet in diameter at the hase, with a very straight stem; and the Indians at Tlaxeal
state that it grows to a great size on the mountains near Tenancingo, at an clevation of from 7000 to $\$ 000$ fect.

It is found plentiful on the Real del Monte Mountains, and on the Llanos of Perote and Mineral Monte, at an clevation of from 8000 to 10,000 feet, and is called by the Hexicans, "Cedro," and "Sabina."

It is tolcrably hardy.
No. 31. Juniperus procera, Ifüclest, the Abyssinian Juniper.
Syn. Juniperus Lasdeliana, Larison.
$\Rightarrow \quad$ excelsa procera, Curmière.

Leaves in pairs, opposite, thick, fleshy and very small, ovate-pointed, sealc-like, and imbricated, with an oblong gland on the back, in the adult trecs, but necule-sliaporl, loosely spreading, and sharp-pointed on those of the young plants. Branches roundish and spreading ; branchlets numerous, and dense on the outer parts. Berries oval, the size of a common poa, and glaucous.

Timber hard, firm, and ciurable.
This is said to be a huge trec, found in Abyssiuia, of which little is known, except that it vory much resembles the tall Crimean Juniper (J. excelsa), and probably not different except in size, which may be caused by the favourable offects of olimate, soil, cte.

No. 32. Juniperus Occidentalis, Hooker, the Westom Tree $J$ uniper.
Syn. Juniporus Hermanni, Persoon.


Syn. Juniperus bacciformis, Inight.
tetragona osteosperma, Torrey.
occidentalis fragrans, Hoit.
Chamecyparis Boursierii, Decaisnc.
Cupressus bacciformis, ľnight.
Leaves (on the adult trees), in opposite pairs, almost round, or ovate, blunt-pointed, closely imbricated, in four rows, convex, and with a hollow gland upon the back, full of clear resin ; very small, and of a silvery white colous:

Leaves (on the young plants) ternate, neelle-shaped, or lanceolate, spreading at the points, and distant; but as the pliants get older, gradually change to those of the adult ones. Branches very dense, spreading, and cylintrical, with a dark-coloured bark; bramchlets, numerous, short, four-sided, alternate, and of a glatucous silvery colour; those of the apen shoots on the young plants, almust white, and with a very strong disagrceable smell when bruised. Berries globular, smooth, doep purple, covered with a silvery white powder, and produced singly ou the ends of the small branchlets on the upper part of tho tree.

A tall tree, growing from 60 to S0 feet high, and two or three feet in diameter.

It was first found by Douglas, growing on the Stony Islands in the Columbia River, and in the valley of the Rocky Mountrins; a tree 60 or 80 feet liggh. Jeffrey more recently found it in tho Nlamet Mountains, in the Oregon territory, at an elevation of 5000 feet, growing in desert tracts of country, where there was scarcely any other vegetable production; the soil being almost entirely composed of samil, and very dry. A tree 40 feet high, with an mubrella-slaped top, and sometimes three feet in diameter, with foliage covered with a silvery glauecus bloom, nnd very strong scented.

It is quite hardy, but emits a strong disagrecable odour when binised.

No. 53. Juniperus pachypilea, Torrey, the Sweet-fruited Juniper.
Syn. Juniperus Sabina pacliyphlæa, Antoine.
Leaves in threes, seale-formed, closely imbricated along the branchlets, ovate-rhomboid, somewhat acute-pointed, very glaucous, aud convexly-kecled on the back, with a sunken glaueous oval gland in the centre; branchlets rather sloort, obtusely four-sided and somewhat elosely arranged, horizontally in two rows. Berries solitary globose, half an ineh in diancter, and of a brownish colour, thickly covered witl a white glaucous bloom, sweet-tasted, and produced at the ends of the short, creet branelilets.

A moderate sized tree, with terete branchlets, eovered with a white glaucous bloom, found on the Zuni mountains, in the western part of New Mexico.

It is hardy, and the whole plant lias quite a white appenrance.

No. 34. Juntperus Phearcea, L. the Phœenician Juniper.
Syı. Juniperus tetragona, Mcench.


Leaves opposite, or in threes, bright green, imbricated, bluntly egg-shaped, somewhat channelled, and convex on the back, and perfectly smooth; but on some of the branches a few open, sharp, lancoolate, glaucous leaves are found in whorls of three. Young branches, entirely covered with very small leaves, which are disposed in threes, opposite to cach other; elosely covering the surface of the branchlet, and laid oue upon another, like seales. Male and female flowers mostly on separate plants, but sometimes they are both found on the same plaut. Berries, terminal, about the size of a pea, pale brown,
shining, of an irregular, globular form, slightly comprensed and anconlar; the pulp is dry and fibrous, and each berry contains three or four seods.

A small tree, or large bush, from 1.5 to 20 feet in height, loaded with numerous brunches, so disposed as to form a regnlar pyramid.

This species is found on the rocks along the silores of the Mediterranean, particularly on the Freneh Coast; from Niec to Calabria, and Sicily, and along the Ionian Sea, the Adriatic Ciulf, in Crreece, the Levant, and in Barbary.

There is the following variety:-
Juympres Phoinica Lycis, Loulon, the Lycian Juniper:

> Syn. Juniperus Lycia, Limmus.
> ". $\quad$. Plomicea malacocarpa, Einelliclu i:

This variety liflens from the specics in being rather smaller in all its parts, but more spreading and bushy, of a deeper. green, and in the bervies being much larger, rommer, less angrnlar, aul nearly black (not pale yellow) when ripe, and in being soft and glaucons.

It grows from 10 to 1.) feet high, and is found growing in the south of liurope, the Levant, in Italy; and spain.

This is the C'ypress-leaved Cedar of the Cireeks, which produces the "Olibanum," used as incense in religious ceremonios on the Continent.

No. 3j. Jiximmés spilerica, Linelley, the Globular-frnited Jumiper.
Syn. Juniperus Fortunii, Van Houtte. " " Chinensis Sinithii, Loudon.
Leaves in opposite pairs, imbricated, very rarely sharppninted, except on young plants; seale-formed, blunt-pointed, slightly spreading at the points, of a shining, lively green colour, and with a little cireular sunken pit or gland on the lack of the leaves. Branches numerous, slender, and eurved. Bramelslets roundish, fom-sided, thickly covered with small, scale-like
fuliage, and bright green. Berries exactly round, tolerably large, twice the size of those of the Common Chinese Juniper (Juniperus Chinensis), smooth, and of a violet glaucous colour.

This species, according to Fortune, grows to the height of 30 or 40 feet in the northern parts of China, forming a stately tree. It has long been cultivated in England under the name of Juniperrus Smithii.

Juniperus spherica glanca, Fortune, is a very different kind from the above, and of which little is known.

## No. 36. Juniperus tetragona, Schlecht, the Tetragonal

 Juniper.Leaves on the adult plants, in pairs, opposite, fleshy, obtuse, egrg-shaped, thickest at the points, and very closely imbricated, from half to three-fourths of a line long, and regularly and closely in four rows, but rather distant when old, and withered on the branches ; and of a dull green colour, slightly glaucous when young. Branches spreading, nearly flat, with the ends turned upwards; smaller ones short, and thickly covered with truly four-sided branchlets. Branchlets straight, regularly foursided, very numerous, stiff, spread out, and the fruit-bearing ones slightly curved, and very dense at the ends of the branches. Berries solitary; about the size of a small pea, globular, with a few scars, and thin scales on the surface, of a dark purple colour, witlo a slight glaucous bloom on the surface, and three or four lines in cliameter.

A beautiful low-spreading shrub, growing from four to five feet high, plentiful on the mountains of Mexico, particularly on the mountains from Real del Monte to Chico, at an elevation of from 10,000 to 11,000 feet. It does not produce Sanderac, but is quite hardy.

## DOUBTFUL KINDA, OR THOSE OF WHICH LITTLE is KNOWN.

## No. 37. Juxiperles cesia, Camière.

This kind is said to belong to the Sarin tribe, and to have leen found in the north of Europe, where it is mail to be an erect bush, with mmerons aseending branches and branchlete, covered with opposite smouth, glos-y leares, punded on the umder side, and glatuens blue above, more or less needle-slapmat, or lanceolate and prealing. Probably Juniperus Virginiana glanca, which is sometimes named J. ceesia.

No 3s. Juntrme's Cembosincts, Fullay, the Island of Certos Juniper.
Leaves small, ovate-acute, closely imbricated, with a smbin gland on the lack, and armared in six directions. Berrices whburg or exg-shaped, brownish purple, thickly covered with is white glauculns bloom, and containing three seed?

It forms a dense bush, or amall tree, with horizontal, sprealing immehes, foumd on the Cerros Whm, in California.

## No. 39. dexirt:res plochym:rua, Tome.

Of this kind little is known, begond that it forms a low tree, with very long and widely cextended hranches, on the Zuni and Colorado Dountains, in New Mexico.

No. 40. Jusiperles rachama, likso.
A kind and to be found in the south of Europe, by M. Rison, probably in Ňaples.

Nu. 41. Jumpiru's shedrien clauch, Fortene, the Glaucous Chinese Juniper. Syn. Juniperus sp., hova, Fortuhe.
Mr. Fortune states that this kind is found in the nonth of China, growing from 15 to $\because()$ feet high, with yuite a white or ghacous appearance, even at a great distance.

Gen. LARIX. Link. The Larch.
Flowers monccious, or male and female on the same plant, but separate; the male catkins small, without footstalks, and egg-shaped; the female ones crect, solitary, ovate, and much larger than the males.

Cones small, oval-obtuse, or sonewhat cylindrical, and consisting of but few scalcs.

Seales persistent, leathery, thin towards the margins, and a little reflected or undulated.

Bracteas either longer or shorter than the scales, unevenly notched on the edges, ovate-pointed, or lanceolate.

Sects very small, with a leathery covering and membranaceous wings.

Secd-leaves from tive to seven in number.
Leaves deciduous, linear, obtuse, soft, without footstalks, and cither produced in bundles or singly.

The nane Larch, according to some authors, is derived from the Celtic word "Lar" (fat), on account of the trec producing an abundance of resinous matter, which flows cxtcrnally down its stem, and which Ovid describes in the following lines-

> "The new-made trees in tears of amber run, Which harden into value by the sun."

But, according to other writers, the name is derived from the Welsh "Llar" (wide spreading), on account of its horizontally extended branches. Its Spanish name, "Alcrec," and its Italian one, "L'Arice," are derived from the Arabic "Al-araz," a kind of cedar, or conifcrous tree.

All deciduous trees, found in the colder parts of Europe, Asia, and America.

No. 1. Larix Daifurica, Turcaninour, the Dahurian Larch. Syn. Larix Europea Dahnrica, Loudon.

Gmelini, Ledebour:
Abies Gmelini, Ruprccht. Pinus Dahurica, Fischer.
„ Larix Americana, Pallas.

Leaves single, or in bundles of many together round a central bud; they are single on the leading shoots and young plants, soft, narrow; linear, blunt-pointed. spreading, recurved, and deciduons, without any footstalks, and of a bright green colour; a little glaucous when young. Branches distorted and pendnlous. Cones oblong or egg-shaped, and tapering rather most towards the apex; from laalf to three-quarters of an inch long, erect, and not compact. Scales very small, reflexed at the margins, wavy, or slightly jasged, and not falling off when ripe; bracteas shorter than the seales, ovate, and pointed. Seeds very small, and winged.

A small tree, dwarfing duwn by climate to a stunted busly, or irregulat-growing little tree, only a fow feet high, with twisted, half-penduluts branches, thickly furnished with bundles of the leaves all round the branchets.

It is found in Northern Siberia, on the bleak mountains of Dahuria, and in the aretie regrions of Siberia, a mere little sprawling slrub, amongst the last restiges of arborescent vegetation in those places, also in cold mountainous places, from the Ural Momntains to the Pacific Ocean.

> No. 』. Larme Eurorai, $D C$, the Common Lareh.
> Syn. Abics Larix, Lemurck.
> ," Larix decidua, Milla:
> ". ., byamidalis, Sulisbury.
> ", ," excelsa, Link.
> ". ". vulgaris, Fisclur.
> ", " communis, Larlson.
> ," Pinus Larix, Limutu.

Leaves in bundles, many together round a contral bud, hat singly on young plants and the leading shoots, deciduons, lincar. soft, hhunt, or rounderl at the points, spreading, slightly recurverl, and of a beantiful bright green. Cones of a longish oval shape, erect, of a brown colour, ne inch long, and remaining for a long time on the trees. Scales persistent or not falling ofi; romdish, streaked, and slightly waved on the margins ; bracteas generally
longer than the seales, particularly towards the base of the cones. Sceds small, of an irregular oval form, with a broad wing; seed-leaves, from five to seren in number. Cones ripen late in the autumn.

A finc, deciduous, and quick-growing tree, in favourable situations attaining from $S 0$ to 100 feet in height, and from three to four feet in diameter, with a conieal head, and horizontal, spreading lounches, with the Lranchlets pendulous, particularly in old trees.

The Common Larch is spread over Central Europe, and forms forests in the upper regions of the $\mathrm{Alps}^{\mathrm{s}}$ of France and Switzerland, from east to west; its proper region is at a height of from 3000 to 6500 fect of elevation, but it sometimes occurs as high as 7000 fect of elevation; but then it is a dwarf bush or serublby plant, while it, on the other hand, descends as low as 1500 fect, but is not found nnywhere on the Apennines, necording to Professor Schouw; and is less common on the northern than on the southern slope of the Alps. It is fomed on the Carpathian Mountains, in Tyrol and Hungary, but does not exist in the German plains, nor in the mountains of Scandinavia, nor in the Pyrenees, and is equally wanting in Grecec, and in the Iberian peninsulit. Those Larches found in Russia, \&oc, are different species.

The following are the most striking varieties of the Common Lareh.
Lapid Europaa pexdela, Loudon, Godsall's Weeping Lareh. Syn. Larix Europea Codsallii, Loulon.
A very distinet variety; on account of its very pendent branches, said to be a subvariety of the Tyrolese Larch, picked out of a seed-bed in Mr. Godsall's Nursery.

## Larti Eurorara repeas, Loudon.

Another variety, differing from the Common Lareh in having wide-spreading, robust branches, and a less aspiring sten, with all the lateral branches pendent.

## Larid Eurorea nebbra, Endlicher: <br> The Red-flowered Common Larch.

## Larix Europala alba, Endlicher:

The White-flowered Common Lareh.
There are other varieties to be found in nurserymen's lists, but which aro of only trivinl account, such as Larix Europaa luxe, the loosc-headed Larch, the Larix Europea compuctur, the compact-headed Larch, and Larix Europear, Tillermanii, a dwarf monstrosity, with remarkably thickened branches, densely elothed with leaves.

No. 3. Lamx Gmpitmi, Itookis, the Sikkim Larels.

> Sym. Abies Griffithian, Limdly.
> „ Larix Grifththana, Mort. sikkimensis, Moukr:

Leaves deciduous, and growing in scattered bumbles of many together, round a central bul, or singly on the young shouts linear, narrow, and longer than those of the Common Larch; slightly ghaucous when young, spreading, inn of a beautiful light green, lut which, in nutumn, before falling ofi, becomens of a red colour. Cones large, oblong, eylindrieal, withont footatalks, bhunt-pointed, erect, two inches and a half loner, and one ineh broad, aud slightly incurved, reddish-purple when yomes, and abounding in tears of white resin. Scales rounderd, half an inch hroad, slightly meven at the margin, and mumerons. Bracteas flat, wedge-shaped, broadest near the base, and nearly as lung as the seales, to which they are nttached; mevenly nutched on the edges, and projecting heyond the lower seales. Seeds angular, with a short but broad wing, a yuarter of un inch long, and of a dull hrown coluur.

A tree rarely growing more than thirty or forty fect hirgh, except on the shingly lanks of Alpine streams, where it sometimes attains a height of sixty feet, and, according to $D r$.

Hooker, it forms an inclegant, sprawling, branched tree, with the branches standing out awkwardly, and often drooping suddenly.

This species oecurs very common in Bhotan, Sikkim, and in the valleys of Eastern Nepal, elose up to the snow-line, at from 9000 to 12,000 feet of elevation, but is never found in the sub-Himalayas, and rarely occurs gregarious, or in clumps. The leaves, which redden and fall in November, are in more seattered fascieles than those of the Common Lareh, and brighter green when young; eones large, reddish-purple; when young, erect, and abounding in tears of white resin.

It forms an inelegant thinly-branched tree, growing only 30 or 40 feet high, and called "Sah" by the Bhotiyas.

The timber is small, but splits well, and is used for flooring.
It was first discovered by Dr. Hooker, aud named in compliment to the late Dr. Griffith.

No. 4. Larix Kamtschatica, Curière, the Kamtsehatka
Lareh.
Syn. Pinus Kautschatiea, Encllicher:
Abies Kamtschatica, Ruprecht.
Sibiriea, Fischer, not Lcdebour.
Fiseherii, Leclebour:
This kind resembles Larix Dahuriea, but has mueh larger eones, with the scales half an ineli broad, and very differeutly shaped. It has been much eonfounded by Russian writers with Larix Dahuriea, but may at onee be distinguished from that kind by its mueh larger cones, which are one ineh and a half long and one ineh broad, and on long foot-stalks.

It is found in Kamtschatka, at St. Paul's and St. Peter's, varying very mueh in stature and appearance, aecording to soil and elevation, but mostly a tolerable-sized tree.

No. 5. Larix Ledebourii, Ruprecht, the Altaian Larch. Syn. Larix Altaica, Fischer.

Pseudo-Larix, Loddliges.
intermedin, Lurson.
Archangelica, Lart:son.
rossica, Subine.
decidua rossica, IIenk:
Sibirica, Ifeldhour?, not Fiscler?:
Enroprea Sibirica, Lomion.
Abies Ledebourii, Rurrecht.
Pimis Ledebourii, Eindlicker:
Larix, Pullus.
Psemdo-Larix, Stoudel.
Leaves single, or in bundles of many together round a central bud, but mostly single on the leading shoots and young phants, soft, hincar, lroad, and rather that on rigorous young plants, but on older ones rather four-sided, obtnse, and with much longer and bronder foliage than the Common Lareh, and darker green. Branches rohust, but not numernus, and pendent. C'ones very small, erect, slender, and rather lonse. Sicales oval, with the margins entire, couvex, and persistent. Seeds very small. A tall, luxuriant tree, similar to the Common Lareh in appearance, but with very much smaller cones, and much louger and broader foliage, growing from s0 to 100 feet high, at elevations of from 2500 to 5000 feet, on the Altai Mountains, in Siberia.-This is the Russian or Archangel Lareh of the murseries, and the Russinn name for it is "Listvemet a " (crown of leaves).

No. G. Labix improlbpis,Sifbold, the Slender-scaledJapan Larch.
Sym, Larix Japonica, Curviere.
" Ahies norlosa ("Fusi-matu"), Iuponese.
" Pinns nummularia ("Kin-t'sian-sounct"), J"puncece.
" " leptulepis, Emellialur:
" ." Lirix, Then nlum\%
Leatice linear, himit-pmintot, in humiles of many torether
round a central bud, but sometimes singly on the leading shoots and young plants, deciduous, soft, spreading at tho points, slightly recurved, and of a beautiful light green; from three-quarters to one inch and a quarter long. Branches nearly cylindrical, smooth, yollowish-gray when young, very sproading, horizontal, and in regular whorls. Branchlets slonder, mostly drooping, and thickly covered with bundles of leaves. Cones ovatc, rounded, blunt at the ends, terminal and numerous on the ends of the small, short branchlets, remaining on the trees after the seed is shed for years, and about the sizo of those of the Common Lareh. Scales numerous, alternate, thin, flat, imbricated, upper part rounded, jargged, reflocted, undulated, and almost reduced to a thin membranc, of a grayish-brown colour, and clawn to a point at the base. Bracteas lanceolate, acute, very entire, membranacoous, diy; and shorter than the scales. Scods almost three-sided, with wings four or five lines long, blunt at the ends.

This kind closely resembles the Common Larel, but differs from it in having more rounded cones, with slenderer and more numerons seales, indulated and torn on the upper margins, and in being altogether a more slender tree.

A tree 40 feet high, found on the Frikone Mountains, in the Island of Nippon, and on the Island of Jezo, in the north of Japan. It is eultivated by the Japanese in pots, which, in some instances, are priceless ; hence its Japan mame (Kin-t'siansourig), Money Pinc.

The Japanese call this tree "Fus-ji ") buds crowned with leaves), and "Fusi Matsu" (pine full of buds), also "Rax-josjo" (common deciduous fir), and the Chinese call it "Karamats," which also means a pine full of bucts, or one with knotty branchlets.

It is found at as high an clevation as 9000 feet, on the sacred nount, Fusi-Yama, in Japan, where it becomes a mere shrub, two feet ligh.

No. 7. Lamax Lyaidi, Parluture, Mrr. Lyall's Lareh.
Leaves on the branchlets in bundles of from 40 to 50 , erectly apreading, anrved, narrow, linear; blunt-pointnd, rather soft, and threc-quarters of an ineh loug, and about a quarter of a line broad; those on the youmg shonts are single and much Honger. Branches nearly horizontal, with the young shoots and huds densely eluthed with a whitish colweb-like wool. Buds on the branchlets oval-rghone, with the perula or scaly covering very short, imbricated, and of a hrownish colour, ant 'with the marerins of the seak frinen with a long, coloweblike wool. (Full-sized cones unknown.) Yomig cones solitary, somewhat reflexed, sessile, chlong. hlunt-pinterl, and two inches long, and ono inth browh. Siales numerous, loosely imbrimatel, somewhat eartilacinous, nearly orhicular, roumbenl or subemarginato at the ends, lather conves on the hack, am iwith a ciliated or fringed margin. Bract ats alliptie, eremated on the elges, with the midlle nerve prolunged into an awlshaped point longer than the scale. Ficeds small, with the wings tho same length as the scales.

A ly ramidal tree, growing from 36 to to feet high, in nonthwest America, on the castern slope of the liocky Mountains, in the (ialton Range, and Cascadn Mountains, at an elexation of from (5000) to 7000 feet.

This is a very remarkablo species, on account of the coluweblike wool that cluthes the leaf-buds and yomerg shonts, and the long fringe of the scales that surround the buds.
'Nu. S. Lamix merocarpa, Lambert, the Pme Ameriean Lame
Syn. Larix Americana rubra, Loudon.

Leares decihnons, in lundles of many together, round a
eentral bud, or singly on the young shoots, from half to threequarters of an inch long, of a vivid grass-green, and shorter and narrower than those of the Common Lareh. Branches horizontal or slightly pendulous, upper ones rather aseending. Branchlets pendulous, and, like the branches, short, numerous, and dense. Cones lialf an inch long, and three-eighths of an inch broad, oblong, ereet, and of a red or violet colour. Scales oval, slightly incurved, distinctly striated, and entire. Seeds very small, wings short, and of a light brown colour.

A large tree, with a slender, pyramidal head, and numerous horizontal branches, which are not very long, but forming rather a close head.

It is found in North America, from Canada to Virginia, but mostly abounds in Vermont, New Hampshire, and the district of Maine, attaining a height sometimes of 100 feet, and two or three feet in diameter.

Its timber is much estecmed in America, being heavy and resinous.

No. 9, Larix occidentais, Nhuttull, the Great Western Larch.

Syn. Larix Nuttallii, Parlutore. ". ", Americana brevifolia, Carrière.
Leaves on the branchlets in bundles of from 14 to 20 , crectly spreading, stiff, narrow, linear, attenuated at the base, somewhat obtuse at the apex, of a pale green colour, and from onehalf to three-fourths of an inch long, and threc-fourths of a line wide. Cones small, solitary, erect, ovate-globose, and from three-fourths to an inch long, and three-fourths of an inch broad. Scales orbicular, not very numerous, loosely imbricated, subcartilaginous, somewhat truneate or emarginate at the ends, convex and shining on the back, rather, reflexed and entire on the margins, and one-third of an inch long, and about the same wide. Bracteas elliptie, denticulated on the edges, acutely pointed, and extending beyond the seales. Sceds obovate and white, with short, oblong-obtuse, pallid wings.

A splendid pyramidal tree, 150 feet high, with rather short hranches, the lower ones being nearly horizontal or slightly declining, the upper ones more or less ascending, and the young slinots glabrous, and furnished with numerous round, blackish buds.

It is a native of nortl-west America, on the Rocky Mountains, and along the Columbia River, at an elevation of from 5000 to 6000 feet.

No. 10. Larix pendula, Serlisbury, the Black American Larch.

Syn. Ahies pendula, Limalley.
" Larix Americana pendula, Loudon.
" $\quad$ " nigra, Hort.
" Pinus liendula, Aiton.
" " laricina, Duroi.
" $\quad$ Larix nigra, Mursh.

Leaves deciduous and either in bundles of many together, or single on the joung shoots, three-quarters of an inch long, and like those of the Common Larch in shape, but loager, darker in colour, and arising from short buds. Branches few, remote, long, pendulous, and in whorls. Branchlets also slender, and more pendulous than the branches. Cones ovate, rounded at the ends, crect, easily detached from the branchlets, and threequarters of an inch long. Seales rounded, loosely imbricated, largest near the base, entire on the edges, and curved inwards. Seeds small, with short wings.

A medium-sized, straggling-headed tree, with a stem seldom more than one foot and a half in diameter, and with few branches, which are long, peudulous, and thinly furnished with branchlets.

It is found on the mountains of North America, particularly in Cinma, New Jersey, Pennsylvania, and the coldest and gloomiest exposures in the mountainous tracts of Virginia, where it is called by the lumberers "Hackmatack" and "Tamarack," and Black Larch.

The wood of the Black Larel is very important to the shipbuilder in the United States, and is in every way superior to that of the Common Larch. In the British Provinces it is a Hlourishing tree, not unfrequently found growing on hard and dry soil, and the timber of superior quality. In the United States it is confined in its grow th prineipally to the swampy parts of the Pine distriets of the Northern States. The timber is not large, but well adapted for the top and deek framing of vessels ; and for lightness, strength, and clurability combined, the Hackmatack timber is unequalled in its class.

## Gen. LEPIDOTHAMNUS. Philippi.

Flowers, diœeious or monœcious. Male eatkins small, eggshaped, and terminal.

Fruit, solitary and terminal, with few seales, the lower of which are the largest and sterile, and the upper ones the smallest and fertile.

Seeds, solitary, pitcher-shaped, naked at the top, and girded at the base by a cup.

Leaves, minute, scale-formed, convex or keeled on the back, thickened at the points, and regularly imbriented.

Name, derived from "Lepis," a seale, and "Thamnos," a shrub, the twigs of the plant being eovered with minute, sealelike leaves.

A ramose slirub, with the branchlets erowded elose together, found in the Province of Valdivia, and on the Cordillera Pelada, in Chili.

Lepidothannus Fonki, Philippi, Fonk's Lepidothamnus.
Leaves minute, seale-formed, convexly keeled on the back, thickened at the points, and regularly imbricated. Nale catkins small, egg-shaped, and terminal; female ones solitary and terminal. Fruit with few seales, the lower of which are
the largest and sterile, and the upper ones fertile. Seeds solitary, pitcher-shaped, naked at the top, and girded at the base by a cup.

A ramose shrub, with the branchlets crowded close together, found in the Province of Valdivia, and on the Cordillera Pelada, in Chili.

## Gen. LIBOCEDRUS. Endlicher. The Incense Cedar.

Floucres, moncecious, or male and female on the same plant, but separate and terminal. Wale catkins almost cylindrical ; femalo one.s sulitary and globular.

Cones, oval, more or less obtuse, woody, and composed of from four to six scales, which are flat, or slightly concave on the inner face.

Scalce, in opposite pairs, face to face, and not overlapping ; the lower ones small and mostly abortive; the whole of them furnished with a terminal, small, incurved point below the apex, and leathery in texture.

Secds, singly, or in twos under each scale; the upper or larger scales having each two seeds at the base, while the two lower or smaller ones are either abortive, or have but one seed each. Seeds unequally two-winged.

Sced-leares, in twos.
Lenves, seale-formed, compressed in opposite pairs, and in four inbricated rows, the under and upper ones much the smallest.

Nume, derived from "Libanos," ineense, and "Cedrus," the cedar.

All large evergreen trees, found in Californin, Chili, and New Zealand.

No. 1. Libocedrus Chilensis, Encllicher, the Chilian ArborVitæ.
Syn. Thuja Chilensis, Don.
" " Andina, Pampig.
" " cuneata, Dombey.
" Cupressus Chilensis, Gillies.
" $\quad$ thyoides, Pavon, not Linnceus.

Leaves in pairs, opposite, compressed, blunt, glaucous at the sides, bright green at the baek and edges, the lower pair being much larger than the upper ones, and keeled at the back. Branches compressed, obovate between the joints, bright green, with glaucous furrows, and thickly covered with leaves, flattened, and two-edged. Cones drooping on short foot-stalks, half an inch long, and consisting of four woody scales in opposite pairs. Scales face to face, and not overlapping, with a slarp tubercle on the outside below the apex; the two larger scales have each two seeds at their base, the two lower or smaller ones being abortive, each cone generally having four seeds, which stand erect, and with unequal-sided wings.

A fine evergreen tree, attaining a height of from 60 to 80 feet in the Andes of Chili, where it is found in cold valleys on the Southern Andes, and on the volcano of Antuco, a mountain about three degrecs north of Valdivia. Pæppig states that it resembles the American Arbor-Vitre when full grown, but is less robust, sometimes branching from the base and gaining the habit of a Cypress, but in other cases forming a conical head, with a straight trunk, clothed with rough, cracked bark of a brownish-ash colour, and scarcely more than a foot in diameter, timber yellowish, resinous, hard, and strong-scented.

It is nearly, or quite hardy in favourable situations in England.

## Libocedrus Chilensis viridis, Hort.

Syn. Libocedrus excelsa, Hort.
This variety only differs from the species in having bright green leaves, and cntirely free from the glaucous bands on the leaves and branchlets.

No. 2. Libocedrus decurrexs, Torrey, the Decurrent-leaved Arbor-Vitet.


Leaves on the young plants awl-shaped, somewhat lanceolate, decurrent at the lase, extended at the apex, and sharppointed, loosely imbricated in four inws, thickly set on the branchlets in opposite pairs, the outer pair or marginal ones being longest, and folded partially over the inner pair on both sides, giving the young shoots a jointed, trident-like appearnince. Laves on the adult plants very small, scale-formed, one-twelfth of an inely long, and one twenty-fourth of an inch wile, ovate, blunt-pointed, thick in texture, in close opposite pairs, rather distant along the branchlets, pale green, and shining, the marginal ones overlapping the sides, and having the appearance of being in threc rows on each side. Branches rather erect, long, slender, and spreading laterally, with numerous smaller ones. Branchlets short, flattened, channelled alony the sides, distantly jointed, proliferous, short, and altermate. Cones ereet, solitary on the ends of the upper branchlets, oblong, tapering to the points, one inch or more long, and half an inch wide near the base, and composed of two opposite pairs of seales, witl a flat one down the middle,
and of a pale olive-brown colour. Seales fleshy, upper pair pressed together at the margins, and containing two secds under each; the lower ones overlapping, much shorter and smaller, but varying very much in size, abortive, and with a double margin, having the appearance as if a thin scale had grown to the back of the others, the outer one having a raised edge all round, terminating in a thin, blunt, reffexed point. Seeds soft, somewhat angular, rounded on one side, and with the elliptie wing, measures three-quarters of an ineh in length, and cover the inner faee of the seale. Seed-leaves in twos.

A noble evergreen tree, with an umbrella-shaped top, and straight stem when old, growing from 40 to 140 feet high, and from three to five feet in diameter.

It is found plentiful on the north-west eoast of America, along the banks of the Columbia River, and on the mountains in northern California. Hartweg found it on the hills surrounding Bear Creek, in California, a tree 130 feet high, with a trunk from 13 to 16 feet in cireumference; and Jeffrey along the banks of the Seots River, growing in sandy soil, a tree 140 feet ligh, and five feet in diameter. It is also found on the Sierra Nevada, or Snowy Mountains, and along the Saeramento River.

It is the White Cedar of the Californians, and is frequently misnamed Thuja gigantea, as pointed out by Professor Parlatore.

## No. 3. Libocedrus Doniana, Endlicher, Don's New Zealand Arbor-Vitæ.

Syn. Thuja Doniana, Hooker:
" Dacrydium plumosum, Don.
Leaves in four rows; marginal ones more or less extended at the points, acute, and elasping on both sides; while those on the upper and under surfaces are pressed flat, very much smaller, nearly round, and acute pointed, with the outer surface of the leaves elothing the under part of the branchlets of a mueh lighter colour, and thickly covered with a glaucous
bloom, while the outward part of those on the upper side are smooth, and of a glossy green. Branches rounded, and covered, with a smooth, brownish bark. Branchlets arranged in two rows, flat, compressed, and clothed with four rows of small, imbricated leaves. Cones half an inch long, solitary, ovate, obtuse, and borne erect on the points of the short branchlets. Seales in two opposite pairs, woody, and with a solitary twowinged seed under each scale.

A tree from 30 to 70 feet high, and two or three feet in diameter; found on the northern island of New Zealand, in forests along the river Hlukianga, near the Bay of Islands, also on the wooded mountains more to the north, and on the ligher mountains of Nelson, at an elevation of from 4000 to 6000 feet, where it is called "Kawaka" by the natives. Timber hard, resinous, and of a beautiful reddish colour.

It is tolerably lardy in farourable situations in England.

## No. 4. Libocedics tetragona, Endlicher, the Tetragonal

 Arbor-Vite.Syn. Thuja tetragona, Hooker.
"Juniperus uvifera, Don.
," Pinus cupressoides, Molina.
Leaves in four rows, oval, blunt-pointed, concare, hardly two lines long, and closely adpressed, keeled on the back, much sharper towards the apex, and of a light green colour. Branches, horizontal, and irregularly scattered along the stem; branchlets, placed in two rows, spreading, four-sided, and completely covered by the leaves. Cones solitary; ovate, erect, small, and produced at the extremity of the short branchlets. Scales woody, or somewhat leathery; alternate in three pairs; the lower ones small, and nostly abortive, the whole of them furnished with a terminal, small, incurved spine near the apex.

A maynificent evergreen tree, from just below the snow line of the Andes of Patagonia, inhaljiting the swampy places between the mountains. It is also found in South C'hili, as far as the
distriet of Magellan, where it becomes little more than a bush, while on the mountains in the neighbourhood of Valdivia, and on the Cordilleras, it becomes a large tree from 60 to 100 feet high, and 18 or 20 feet in circumference, with a straight stem. Timber, excellent, and very durable.

It is the "Alerze" of the Chilians, and quite hardy in the West of England.

## Gen. MICROCACHRYS. J. Hooker. The Smallconed Tasmanian Cypress.

Flowers, diœeious, or male and female, on separate plants, the male catkins oval-ohlong or cylindrieal, and in clusters on the ends of the smaller branchlets; the female ones oval-obtuse, or globular, ereet and terminal.

Fruit, very small, nearly globular, terminal, nodding, somewhat fleshy, bright red, and composed of numerous small seales,

Scales, spreading, loosely imbrieated, oval-rhomboid, thick, rather fleshy, bright red, and from 20 to 30 in number.

Seceds, egg-shaped, solitary at the base of each seale, larger than the seales, more or less exposed, and with a thin, bony shell.
Leaves, ovate, sealc-formed, very small, closely imbricated in four rows, and of a deep, glossy green colour.

Name, derived from "Mikros," small, and "eachrys," a fir eone, the cones being remarkably small.

A prostrate evergreen shrub, found common on the hills of Port Cypress, and on the top of the western mountains in Van Diemen's Land.

Microcachrys .tetragona, J. Hooker, the Strawberryfruited Tasmanian Cypress.
Syn. Arthrotaxis tetragona, J. Hookicer.
"Dacrydium tetragonum, Parlatore.
" " Franklinii, Lindley not Hooker.
Leaves very small, ovate, seale-formed, and closely arranged in four rows on the young branchlets; those on the more adult
parts are thomboid, kecled on the back, closely imbricated, but not adhering, and of a decp green colour. Male catkins clustered on the ends of the little branchlets oval-oblong, erect, and two lines long; the fernale ones are oval-obtuse or globular, erect, solitary, and terminal.

Fruit very small, but much thieker than the top of the branchlets, nearly globular, terminal, nodding, somewhat fleshy green when young, bricht red when ripe, and composed of numerous spreading, imbricated seales resembling the leaves, but much larger: Scales spreading, loosely imbricated, ovate, 'thickened on the back, boat-shaped, acute-pointed, concave in 'the middle, rather fleshy, and bright red. Seeds egg-shaped, solitary at the hase of each seale, more or less exposed, and covered with a thin, bory shell. Branches prostrate, branchlets rery numerous, long, slemder, and entirely covercd with scaleformed leaves, loosely imbricated in four rows, and very like those of an Arthrotaxis, but very much smaller.

A prostrate slurub, found plentiful on the hills of Port Cyprese, and on the top of the western inountains in 'Vian Diemen's Land. It is not hardy.

Gen. NAGELA. Gertner: The Catkin-bearing Laurel.
Flowers, monocious or diœcious.
Fruit, axillary, drupacious, about the size of a cherry, and quite romed.

Rrecplecte, fleshy, and connected with the bracteas by the axis of the short one-fruited spike.

Senter, with a hard thin shell.
Lecues, oppositc or alternate, and many-nerved.
Scer-lecueves, in twos.
Tumer, derived from "Na" or "Nagi," its Japlanese name, and signifying catkin-luallug.

All moderate-sized trees, natives of the East Indies, Java, and Japran.

No. 1. Nageta Beccarit, Gordon, Beccari's Borneo Nagi. Syn. Podocarpus Beccarii, Parlatore.
Leaves opposite or subopposite, spreading, coriaceous, oval or oval-oblong, and cither acute, obtuse, or rounded at the points, very entire on the margins, many nerved, and from one to two inches long, and from half to threc-fourthis of an inch broad, and with short, slender, and somewhat twisted footstalks Fruit exactly globose, two-thirds of an inch in diameter, solitary at the ends of slort, erect peduncles, with a thickened receptacle when ripe, and of a blackish-violet colour, covered with a glaucous bloom.

A noble trec, found in humid places at Sarawak in Borneo, and called "Caju Meddambulu" by the Malays.

It is very tender.

> No. 2. Nageia Blumer, Gordon, Dr. Blume's Java Nagi. Syn. Podocarpus Blumci, Endlicher: $" \quad$ ", agathifolia, Blume. $" \quad, \quad$ latifolia, Blume.

Leaves in nearly opposite pairs, elliptic, or broadly lancolate, stiff, many-ncrved, shining, leathery, and slightly twisted at the base; from three to five inches long, and from one to two inches broad on the adult plants ; but longer, more pointed, and much thinner on the younger ones, and sometimes withered or sphacelate at the points. Branches spreading, cylindrical, and of a brown colour ; outer and upper ones opposite, thick, rounded, jointed, and sometimes compressed at the ends. Flower buds, axillary or lateral, among the abortive leaves, and composed of a few imbrieated, oval-pointed scales, keeled or boat-shaped on the back. Male catkins, in clusters of from three to seven in number oul the short branchlets, sometimes but very rarely on short footstalks; from a quarter to three quarters of an inch long, thick, and of a yellowish colour; footstalks of the fruit, axillary, solitary, and opposite. Fruit globular, singly at first, but soon afterwards, on account of the deciduous nature of the floral leaves, become disposed in bunches at the extremities of
the branchlets, with the outer covering thin and leathery, and the inner one brittle and bony.

A tall tree, from 70 to 80 feet high, with an anple head, full of spreading branches, found in forests on the mountains of Salak, in the Island of Java.

It is very tender.
No. 3. Nagela crspidata, Gordon, the Cuspidate-lenved Nagi. Syn. Podocarpus cuspidata, Emellicher:

Leaves opposite, or sub-opposite, with those at the extreimities of the branchlets, frequently alternate, and somewhat in two rows. They are elliptic, very entire, undulated on the cdges, tapering to a short, stout footstalk, abruptly pointed, wery seldom acute, and never mucronate, and from one and three-guarters to three inches long, and from one and a quarter to one aud a half inches broad in the widest part; of a very deep green on the upper side, and light green below, marked with numerous longitudimal nerves, slightly elevated, and of a bright green colour. Bronches spreading, and cither alternate, or opposite, or in whorls, and frequently maked and much reduced on the adult parts by the falling of the leaves; branchlets opposite, very rarely alternate, and generally in two rows. Fruit unknown.

A small tree, growing from fifteen to twenty feet ligh, found growing on the island of Jezo, in Japan, and much cultivated about Jeddo.

No. 4. Nageia grandifolis, Gordon, the Great-leaved Nagi. Syu. Podocarpus grandifolia, Endlicher.
Leaves opposite, oblong, lanceolate, thick at the margins, many-nerved, and eovered with stomates on both surfaces.

This species, acending to Profensor Endlicher, is eacily distinguished from Dr: Wallich's Podocarpus latifolia, which it mueh resembles, by its leaves beinf stifter amd more than six inches longo and one inch and three quarters broad, and with
the branehlets of a reddish colour, and the buds rounded and obtuse.

It is very doubtful of what country it is a native, but most probably China, or Japan, or the Mountains of India.

It is quite tender.

> No. 5. Nagela Japonica, Gcertner, the Japan Laurel. Syn. Podocarpus Nageia, R. Brown. " Cupressus bambusacca, Otolanzan. " Myriea Nagi, Thunberg. " Laurus julifera, Kcempfer.

Leaves, in opposite pairs, but frequently alternate, elliptie, or oblong-lanceolate, attenuated at the basc, and acuminate at the point; three inches long, and rather more than one inch broad in the widest part. Branches, spreading, alternatc, or opposite, slender, swelling at the place of inscrtion, feequently pendent, and furnished with leaves in double pairs, or in threes, an inch apart betwecn each set; of the same colour on both sides, sinooth, and of a dull, purplish-grcen colour. Flowers, dioecious, but sometimes both kinds are on the same plant. Malc catkins, in threes or fours, on a common footstallk, rising from the axil of the leaves. Fruit, solitary, very rarcly produced in pairs axillary and globose; half an inch long, frequently with the pedunelc curved, and when ripe, of a blackish-purple colour on the outside, covered with a glaucous powder resembling that on the common sloe; rind very thin, soft, suceulent, insipid, looscly adhering, and orbicular; about the sizc of a cherry, quite round, smooth, and with a small top-slaped point on the apex ; shell, hard, thin, and brittle, enclosing a sced covered with a reddish cuticle, and slightly bitter.

A handsome tree, growing from thirty to sixty feet high, with the stem covered with a smooth, soft, flesly-brown bark; that on the branehes being of a bcautiful green, and when cut, emitting a strong balsamic odour.

It is found abundantly in China and Japan, on the moun-
cains; particularly in the provinces of Katsuga and Jamato, on the 1sland of Nippon, in Japan. The Chinese call it "Tucupe" (Bamboo-like), on account of its many ribbed leaves resembling the Chinese bamboo, and the Japanese "Na" or "Nagi," a term signifying the catkin-bearing laurel. The leaves, also, very much resemble those of the Alexandrinn Laurel (Ruscus racemosus) in size and general appearance.

Nagela Japonica rariegita, Goolon, the Tariegated Japan Laurel.

This fine variety law its variegrated leaves variously marked, with pale yellow stripes romning their whole length like a ribbon.

It is a handsome varicty; first sent by Mr. Fortune, from 'Yeddo, in Japan, to the Royal Nursery, at Bagshot, in 1861.

No. G. Nacela Latifolia, Gordon, the Broad-leaved Nagi. Syn. Podocarpus latifolia, W'ullich.
zamicefolia, IIort. Belg.
" " pimata, Hort.
Dammara pinnata, Purmentier.
Leaves in opposite, or sub-opposite pairs, evate-lanceolate, spreading, attenuated at the base, much pointed, smooth, very entire, leathery, stiff, and on short footstalks, not more than one or two lines long; they are in one or two rows, five or six inches long, and one and a quarter broad, of a loright green on the upper surface and pale beneath, with numerous longitudinal nerves, a little elevated, the larger ones being flat and furrowed. Branches, mostly short, slender, spreading, horizontal, or declining, and quite denuded of the exhausted leaves; branchlets cylindrical, and as green as the leaves, the more younger ones heing covered with palc, lanceolate, loosely scattered, glancescent leaves. Flowers monocious, male catkins in bundles of from two to five on a common axillary peduncle, and one inch long. Female flowers fow in number, axillary,
solitary, opposite, or under the male ones, and supported on eylindrieal footstalks about one ineh long. Fruit, somewhat globose, or obliquely oval, slightly pointed, and three quarters of an inch long, with the base placed in an oblong cylindrieal cup, green at first, but afterwards purple, and covered with loose-spreading, lanceolate bracts.

A middle-sized evergreen tree, from twenty to thirty feet high, found on the Mountains of Pundna, a lofty range bordering on the castern parts of Bengal, and not far from the district of Silhet, where it is called by the natives "Soploug."

It is not hardy.

## No. 7. Nageia minor, Camière, the Lesser Nagi. Syn. Podocarpus, minor Parlatore.

Leaves alternate, crowded on the branchlets, leathery, oblong, somewhat rounded at the ends, sessile, a little twisted at the base, few nerved, and furrowed on the under side, and from half to three quarters of an inch long, and from one and a half to two lines broad. Male eatkins, oblong, two lines long, and produced in threes and fours in a spike-liko fascicle on the ends of the branchlets. Fruit unknown.

An evergreen shrub or small tree, with ercetly-spreading and crowded branches, found along the banks of Lako Arnaud, in New Caledonia.

It is not hardy.
No. 8. Nagela ovata, Gordon, the Ovate-leaved Japan Nagi.
Leaves mostly in opposite pairs, but sometimes alternate, broadly egg-shaped, or rounded towards the base, and with a short, blunt, brown, marcescent point; they, however; vary very much, both in size and shape, some being oblong-lauceolate, others elliptic, while the greater part of them are more or less orbicular or broadly ovate, and from one and a half to two and a half inches long, and from one to ono and a half inches broad at the widest part; of a deep glossy green above,
and light green below; quite entire, flat, leathery, and marked on the under side with numerous longitudinal nerves, very slightly elevated, except towards the base of the leaf, where they are more developed, and unite in the short, but broad footstalk of the leaf. Branches alternate or opposite, spreading, rather slender, and more or less declining ; lateral ones not nurnerous, but spreading; male catkins in fascicles on a common footstalk. Fruit unkinuwn.

A fine evergreen bush or small tree, found in the neighbourhood of Yeddo, by Dr. Fortune, who first sent plants of it to Wr. Standish, of the Royal Nursery at Bagshot in 1861.

Nagela ovata variegata, Gordon, the Variegated Ovateleaved Nagi.
A handsome varicty, with the leaves variously marked, some being striped with broad, others with narrow bands, of a ecreany-white colour, minning the whole length of the leaves like a ribbon; while other leaves are half white and half green, some again are broadly striped with green down the middle, and margined with creany-white ; but all of them differ anore or less in the manuer and form of variegation, all over. the plant.

It was sent to the Royal Nursery at Bagshot, by Mr. Fortune, from Japan, in 1861.

## Gen. PHEROSPH ERA. Archer.

Flowers, diœcious, or male and female on separate plants; the male catkins are small, sub-globose, solitary and terminal ; the fomale ones recurved, solitary, globular and terminal.

Fiuit, egg-shaped, crect, and somewhat fleshy.
Scales, loosely imbrieated, rather fleshy, and boat-shaped.
Seeds, oval-oblong, solitary, and covered witlı a bony shell.
Leaves, small, scale-formed, ovatc-rliomboid, obtuse, convexly kecled on the back, ciliated on the margins, and closely imbricated in four rows.

Name derived from "Phoreo," to bear, and "Sphaira," a sphere. Catkins globular.

A very branching prostrate shrnb, found along the border's of Lake St. Clair, and on the western mountains in Van Diemen's Land.

Pherosphera Hookeriana, Archer, Dr. Hooker's Tasmanian Cypress.
Syn. Mierocachrys tetragona fœmina, J. Hooler.
Leaves small, seale-formed, ovatc-rhomboid, convexly keeled on the back, ciliated on the margins and closely imbricated in four rows. Branchlets numerous, slender, and entirely covered with the small seale-formed leaves, regularly imbricated in four rows. Flowers dinecious. Male catkins small, solitary, globose, and terminal; fernale ones recurved, solitary, globular and terminal. Frinit egg-shaped, ereet, and rather fleshy; scales loosely imbrieated, boat-shaped, and somewhat fleshy. Sceds oval-oblong, solitary, and covered with a bony shell.

A very branching, prostrate shrub, fonnd along the borders of Lake St. Clair, and on the western mountains of Van Diemen's Land.

## Gen. PHYLLOCLADUS. Richard. The Celeryleaved Pines.

Flouers, moncecious, or male and female separate, but on the same plant, and in close terminal clusters.

Fruit, in small, connected heads, with a fleshy disk.
Seeds, solitary, very small, half-enclosed at the base by the Heshy disk, and nut-like, with a thin shell.

Lruces, minute, seale-like bodies, on the margins of the lorathehlets; branchlets, leaf-like, opposite, pinnated, or fanshaped, and feather-nerved. Seed-leaves, in twos.

Name derived from "phyllon," a leaf, and "klados," branclı; leaf-liko branchlets.

All trees, foumt in New Zealand, Bormeo, and Tasmania
No. 1. Phyldocladus Alpisi, Huoler, Alpine Phyllocladus.
Syn. Phyllochadus trichomanoides alpina, Purlutore.
Leaf-formed lranchlets, very small, ou long footstalks, bluntly lobed, obovate, and with the lobes irregularly toothed into divisions; the upper ones very small, more bluntly lobed, and much thickened on the margins; female flowers disposed in twos or threes, in little, cluse, fleshy heads at the base of the leaflike branchlets. A very small and compact little bush, somewhat resembling Phyllocharlus trichomanoides, found on the mountains of Tongariro, Ruahine, and those in the neighbourhoud of Nelson, in New Zealaud, at an eleration of 6000 feet.

No. ?. Phyllocladus hypopiylla, Hooker, the Under-leaf Phyllocladus.
Leaf-formed branchlets, strictly oval-rhomboid, obliquely wedge-shaped at the base, on fontstalks, and with the lobes oblong, oltuse, cremulated or toothed on the inargins, and glaucous on the under side; the superior, of flower-bearing ones, are obovate, truneaterd, deeply emarginate or two lobed, and irregularly toothed on the edges; female flowers without foot-
stalks on the last or utmost division of the leaf-formed branchlets; in small heads, very rarely of more than two or three flowers on the terminal branchlets.

A straight tree from ten to thirty fect high, found at KiniBalu, in Bornco, at an elevation of 8000 feet, and on the Mountain Pae, near Sarawak, at an elevation of 3000 feet.

It is quite tender.
No. 3. Phyllocladus rhomboidalis, Richard, the C'elerytopped or Adventure Bay Pine.
Syn. Phyllocladus Billardierii, Mirbel.
". $\quad$ asplenifolia, Hooker:
" Salisburia Billardicrii, L. C. Ricliard.
" Podocarpus asplenifolia, Labillardier.
" Thalamia asplenifolia, Sprengel.
" Taxus serratifolia, Noisette.

Leaves at first minute, scale-like appendages on the apex and margins of the leaf-like branchlets, which at length become leaves, the leaves themselves appearing to be only compressed branchlets of various shapes, some rhomboid, or oblong fanshaped, pimnatifid, more or less divided, lobed, and all wedgeshaped at the base, closely adhering, decurrent, and with numerous fan-like nerves, the same colour and texture on both sides, and furnished in the centre with a large round rib, most elevated towards the base of the leaf, where it is drawn into a short, stout footstalk, linear-incised, or serrated round the edges, sometimes entire or bluntly lobed, and pinnatifid, with opposite lobes, somewhat pinnate on the lower part, with wing-like appendages. Branches seattered, or somewhat in whorls, ascending or spreating, regularly rounded, mostly naked on the lower part; lateral ones and brauchlets vertical or alternate; branchlets greenish on both faces when young, but of a purplish brown when old and in winter; male flowers on the summit of the leaf-like branches surrounded by the salleformed, imbricated leaves; female ones in separate clusters, small, obscure, and terminal. Fruit in connected heads, two or
three together, each half enclosing in a fleshy covering a solitary seed of an oval shape, with a thin shell, and very small.

A beautiful branching tree, growing forty or fifty feet high, and from two to six feet in diameter, found on the humid Imountains of ' T asmania.

It is not hardy.
'No. 4. Phytlocladu's trichomanoides, Don, the Maidenhairlike Phyllocladus.
Leaflets numerous, and pimated in two rows, obliquely iwedge-shaped, fenthery-nerverl, loberl, or pinnatifidly divided, with the lowes temimating very abruptly; and toothed on the edges, regularly llattened on the upper surface, furrowed, alternate, and chamelled at the lase, deeply divided, with the divisions somewhat two-rowed, withont any footatalks and indented or cremated, lat frequently a little undulated, of a green or reddi-h-green colnur when younc, but of a hitliant red or brown colour when old aud in winter. Branches frequently in whorls of five, spreading and cylindrical ; branchlets, leaflike, sleuder, short, preading, or deflected, and either in whorls or somewhat in two rows. Male flowers terminal, in close heads and eylindrical; female ones in small elusters and terminal. Fruit comnected in small heads, two or three together. Seeds very small, oval-pointed, nut-like, solitary, and halfenclused in it Ileshy covering. Seed-leaves in twos.

A graceful tree, with is straight, cylindrical stem and spreading bauches, growing sixty or seventy fect high, and three or four feet in diameter, found in the forests of Tamesin, on the northern island of New \%ealand, where it is called by the natives Tanekaka, and Ton-Toa. The timber is hard and heavy, and the bark is used by the natives of New Zealand for dying their mats of a red or black colour. There is the fillowing varicty:-

> Phamochaids trichomanompes ghadea, Parlatore. Syn. Phyllocladus glauca, Corrière.

Leafformed branclilets, slender, and tapering to the base; of 0 -
a reddish-green or rusty-brown colour on the upper surface; very fincly and irregularly cut or jagged on the margins, and very like those of Phyllocladus rhomboidalis, with an angular footstalk; the more younger leaves being of a glossy green, slightly glaucous on the under side; while the adult ones are remarkable for their very white-glaucous, or almost bluish-gray colour.

It is a distinet variety, and, like the species, tender.

## Gen. PICEA. Don. The Silver Firs.

Flowers, monœecious, or male and female on the same plant, but separate ; the male catkins axillary or terminal ; the female ones solitary, on very short branchlets, and cylindrical.

Cones, erect, cylindrical, or nearly so, axillary, and growing on the upper side of the branches.

Scales, deciduous, or falling off when ripe from the axile of the cone, which remains persistent on the branches.

Bracteas, dorsal, and cither enclosed by or projecting beyond the seales.

Seeds, somewhat triangular, full of turpentine, two under each seale, covered with a soft tegument, and furnished with ample persistent, membranaceous wings, more or less wedgeshaped.

Sced-leaves, in fives.
Leaves, solitary, flat, pectinated more or less in two rows, persistent, and silvery below.

Name derived from "pix," pitch,-the trees producing abumdance of resin.

All trecs, found in Europe, Asia, North America, Mexico, and Northern Africa.

Pliny and the ancient writers originally ealled the Siver Fir " Abies" (which name may have becn a comruption of Albus, the leaves of the Silver Fir being white when seen from below),
but which name Liuneus afterwards changed to that of Picea, on account of the abundance of resinous matter produced by the tree. Agrain, inore recently Professor Link proposed the restoration of its older name, under that of Abies vera; a suggeation which las been followed by nearly all the continental writers, but rejected by those in England and America; hence the reverse of names applied tq the Silver. Firs and Spruces on the continent, to those used in this country and America.

## Section I. BRACTEATA, OR THOSE KINDS WITH THE

 brictels on the cones dot hidden by the scales, AND ETTHER PROJECTING OR REFLEXED.No. 1. Picea Apollinis, Reuch, the Apollo Silver Fir.
Syu. Picea. C'ephnlonica Apollinis, Gordon.
Kukunaria, Wenderth.
Abies Apollinis, Link:
pectiuata Apollinis, Enullicher:
Regine Amalix, Meldreich.
Peloponnesiaca, German Gurdene.
Ceplalonica Arcardica, Henk. Parnassica, Henk.
Panachaica, Heldreich.
Pinus Apollinis, Antoine.
P'eloponnesiaca, Huaye.
This kiud agrees in several respects both with the common -Silver Fir (Picea pectinata), with which Professor Endlicher associated it in his "Symopsis Coniferarun," and the Cephalonian F̈̈r (Picen Ceplaalonica) witl which I myself identified it in the "Pinctum," and with which kind it entirely agrees both in its cones and habit of growth, but differs more or less in the shape and size of its leaves, which appear to be nendyintermediate between those of the two species, some of the leaves heing lung, linear, flat, and more or less romuded at the ends, and of a glossy deep green above, with a slight furrow
along the upper surfaee, and furnished with two faint hollow glaucous bands on the under side, separated by the keeled midrib, whieh, with the thickened but seldom reflected margins, are pale green; the larger leaves are frequently more than an inch long and one line broad, with the ends always more or less bifid or rounded, slightly ylaucous bencath, and very thiekly arranged on the upper side of the branchlets, on dilated footstalks, more or less twisted, while the lesser foliage, which are always on the more slender and twiggy branchlets, are lanceshaped, very acute pointed, less densely placed along the spray, more seattered round the shoots, much narrower, quite glaucous below, and seldom more than half an inch in length on the adult trees, and very similar to those of Picea Ccphaloniea, but both forms and all modifications from the one to the other are gencrally produced on the same branch; much, however; depending on the vigour or position of the branches and the age of the trees, as to the slape and size of the foliage. The male catkins are in groups, surrounding the summit of the adult shoots, and sessile, while the cones are axillary, solitary, and always erect on the upper side of the top branches, very resinous externally, and quite similar to those of Picca Cephalonica in size and shape, with the scales an inch or more wide, incurved and rounded on the upper margin, bracteas projecting beyond the scales, ear-shaped, Hat, refleeted, mucronate, and lacerated laterally on the edges, and with a long central reflected point.

A handsome tree, rarely excceding 60 or 70 fcet in leight, and two or three fect in diameter, with an ample spreading head and smooth stem, covered with a pale yellowish brown bark, scareely or ever having on its surface any of those blisters containing resinous matter, so commonly to be found on all the Silver Firs. It is found plentiful in many parts of Grecce, forming extensive forests, at elevations varying from 1500 to 4000 foct, but more particularly in the southern parts, such as on the sacred Apollo and on the celcbrated and mighty mounts called Parnassus and Olympus, where in olden times mankind went
in erowds to be dehnded, and giants piled up in hopes to scale heaven. It is alsu found in the Morea, near Tripolizza, once the Turkish capital, in central Arendia, particularly ou the castern part of the plain, at the foot of Mount Mienalus, a region which even the ancients characterized as the "abote of winter:" It is quite hardy. but, like the Mount Enos Silver Fir, unfers meatly (especially when yomg) from the late spring frosts, which so frequently destroy the young growth on many of our Silver Firs.

Much diflerence of opinion still exists anong writers with respect to whether the Apollu Fir hould be considered a distinet species, or only as a variety of the common Silver liar, or Mount Enas Silver Fii: Professor Endlicher considered it as unly a varicty of the Picea pectinatal, while Profes-or Link made it a distinct species, and in which opinion he has been followed hy M. Carriere and some others, while I mynelf at first refersed it to Picea Cephalonica, a kind to which it certainly is very nearly related, and frequently confounded with; birt ifter a careful examination of ample and execellent original specimens presented to me ly Professor link, I have come to the eonclusion that he is right in considering it a distinet precies, especially is it is always reprodnced thme from seed and retains its great diversity of foliage, the larger portion of which is generally more or les linear, dense, and bluntprinted, while the maninder is more or less dagger-shaped very acnte pointed, thickly placed all round the shoots, and like thuse of Pieca Cephatoniea.

The $A$ pollo Fir las been brouglit into notice by Jl. Heldreich, of Athers, under the name of Abies Tergine Amalie, or the New Areadian Fir, and with a statement that it was first uttained in 15.5; hy M. Schmidt, the Curator of the Royal Gardens at Athens, who at the time considered it new, and listinct from the Grecian, or Aplllo Fir, and gave to it the name of Pims Pelopomesiact, hut which name M. Heldreich afterwards changed to that of Abies Rewina Amalia, in compliment to the Queen of Grecee, a great patron of gardening.
M. Selimidt, however, had never seen the tree, nor was any one aware of its peculiarities until Messrs. Balsamaki and Origoni, two inspectors of the royal forests, reached Khrysovitsi, a village in central Areadia, near Tripolizzi, in the Morea, where, at an elevation of about 1500 feet above the sea, they discovered a whole forest of this fir, stretehing in a north-westerly direction towards Alonistena, and covering Mount Rhoudia and the adjacent valleys, thus having an extent of above three leagues in length and one and a half broad. It is called by the country people "Hemeron Elaton" (tame fir), on accomt of the lower situations of its forests on the mountains, and the ready means for obtaining its timber for domestic purposes, while on the other hand they apply the term "Agrion Elaton" (wild fir) to the Picea Cephalonica, because of the inaecessible and lofty places where it in general grows. The inhabitants living near the large fir forcsts are in the habit of ringing the stems, or cutting off the heads of the more vigorous trees at about two or three fect from the groind, for the purpose of obtaining the resin which flows from the wounds and upper part of the stumps, and which stumps afterwards throw out a number of symmetrically-formed sloots, the principal ones of whieh eventually, if undisturbed, become leaders, and form stems frequently twenty feet liggl and one foot in diameter.

No. 2. Picea balsamea, Loudon, the Bahm of Gilead Fir. Syn. Abies balsamifera, Michaux.
" $\quad$ minor, Duluamcl.
" balsamea, Millcr.
" Pinus balsamea, Linnceus.
" Peuce balsamea, Richerd.

Leaves solitary, eutire, or emarginated at the points, irregularly two-rowed, or seattered round the leading shoots, spreading, flat, silvery bencath, and bright deep green above, threcquarters of an inch long, and thickly set on the branehes. Cones cylindrical, slightly tapering to both ends, erect on the upper
part of the branches, fuur inches long and one and a half broad, of a violet colour, and without any footstalks, scales rounded on the upper part, six-eighths of an inch broad and the same in length, entire on the exposed part, and smooth, bracteas rather short, erect, and projecting half the length of the scales, rounded in the middle and terminated with rather a long. sharp point, seeds very small, angular, soft, ind unly hali the size of those of the common Silver Fir, with broad ample wings.

A small pyramidal tree, seldom growing more than thirty or forty feet high, even in America, and one foot in diameter.

It is fuund in Canada, Nova Scotia, New England, and other Northern States of America; ala on the Grandfather Mountain in North Carolina.

The stem of this fir produces hy incision, the Balm of Gilead or Canadian Balsan, used in medicine and the arts. There are the following varieties :-

## Picea balsajea iongeifolia, fondon.

Abies balsamea longifolia, Eindlicher.
This variety has much longer leaves, and more upright branches, and was first obtained by Mussris, Booth, of Hamburgh.

## Picea balsimea vartegata, honighe.

This varicty only differs in having a pertion of the leaves of a whitish colom; intermixed along with the usual green ones, and which gives the tree a rariegated appearance.

Nío. 3. Picea brichiphylla, Goidon, the Short-leaved Silver Fir.
Syn. Abies brachyphylla, Muximowies, "Pinus brachyphylla, Parlature.

Leaves short, straight or curved, Hat, stiff; linear, crowded, and turned upwards on the lamehlets, chlarged at the base, rounded or subemarginate at the points, slightly furrowed
along the upper side, and marked bencath on both sides of the prominent midrib with white glaucous stripes, and from one-half to one-third of an iuch long, and one line broad. Cones solitary, oblong-cylindrical, obtuse at the apex, sessile and erect on the upper side of the branches, and three inches long, and one and a quarter broad. Scales broadly-reniform and resinous, with the margins rounded and entire, and onethird of an inch long, and threc-fourths of an jnch broad, Bracteas broad and lincar below, enlarged and orbicular above. irregularly dentated on the margins, and with a short, projecting point. Seeds wedge-shaped, angular, soft, and full of turpentine, with somowhat equal-sided, persistont wings, broadest at thic top.

A tall, pyramidal tree, found on the mountains of F'usiyama in Japan.
No. 4. Picea bracteata, Louton, the Leafy-bracted Silver Fir. Syn. Abics bracicata, Hooker.
"Pinus bracteata, Don. " " venusta, Douglas.
Leares solitary, two-rowed, linear, tapering to both ends, alternate, flat on the upper side, entire, and sharp-pointed, from two to two and a half inches long, and rather more than one-tenth of an inch wide, bright green above, ribbed with two silverywhite lines below, erowded and seattered at the insertion on the branches, but two-rowed and extended above. Branches in whorls, spreading, slender, lower ones drooping, lesser ones bent downwards; buds composed of large, loose, elliptic, palcyellow seales, destitute of resin, axillary, and scattered along the branches but mostly towards the pointr. Concs ovatc, ercet, on very short footstalks, four inches long, and two inches wide, in great clusters on the upper side of the top adult branches. Scales kidney-shaped, concave and rounded on the upper margin, and stipulate at the back. Bracteas wedgeshaped, threc-lobed, the middle one two inches long, recurved, particularly those towards the base, which are the longest, whilo those towards the summit are nearly straight, much shorter, and
but little changed in appearanee or colour from the ordinary leaves; the lateral lobes are very short, and extend very little beyonil the end of the seales. Seeds wedge-shaped, soft, and angular, with rather short, but broad, membranaceous wings.

Trunk very slender, but as straight as an arrow; with the "pper thind of the tree frequently only clothed with branehes, and giving it the appearance of an elongated pyamid or cone.

A tall, slender tree, growing 120 feet high, but only two or three feet in diameter, first discorered by bouglas, on the monntains along the Columbia River, and afterwards hy Dr. Coulter and Hartwer, on the sea range of Sinta Lucia, in Upper C'alifornia, at an elevation of from 2500 to 3000 feet above the sea.

It is quite harly, but suffers very mueh in its young growth from late opring frosts.

> No. i. Picea Cephafonica, Lomlem, the Mount Enos Fir. Syn. Abies Luscombeana, London. Cephalonica, Lourlon. Pims Cephatoniea, Eindlicher:

Leaves solitary, rigid, that, dogger-shaped, and standing at right angles nn every side of the branches ; lark, shining green above, with two silvery lines beneath, and tapering from the base to the peint, which terminates in a shapp pint; foutstalks very shont, dilated lengthwise at their juneture with the hranches, equally and closely distributed all over the branehes, and not two-rowed, as is commonly the ease in the Silver Firs. Buds prominent, somewhat square-sided, peinted, and slightly covered with resin; luranches very mmerous, in regular tiers on the main stem, but branching in all direetions in the lateral ones. Cones ereet, straight, eylindrieal, tapering a little at both ends, five or six inches long, and an inch and a half in diancter. Scales rommed on the upper part, broad and entire, wedgeshaped helow; bracteas projecting beyond the seales, linearoblong, with the: lower part much attematerl, and tapering gradually into a still, mequally-toothed, ind reflexed sharp point at the top.

A fine tree, growing upwards of 60 fcet high, with a trunk nine or ten feet in circuinference, and a spreading head.

Timber very hard and durable. It is called the Wild Cedar by the Greeks.

It is found on the highest mountain in Cephalonia, called Mount Enos, or the Black Mountain, at an clevation of 4000 or 5000 feet, and was first introduced into England by General Napier, when governor of Cephalonia.

It is quite hardy, but suffers greatly in its young growth by the late spring frosts.

No. 6. Picea firma, Siebold, the Japan Silver Fir. Syn. Abies homolepis, Siebold.
" " $\quad$ firma, Zuccurin

Leaves solitary, somewhat two-rowed, one inch long, very thickly placed on the shoots, linear, flat, and blunt-pointed, or sometimes deeply bifid at the ends, partially sickle-shaped, on very short footstalks, and scldom inserted exactly in lines on the branches; smooth, leathery, of a rich green above, and marked on each side of the mid-rib on the under side with two white lines. Branches in regulur whorls, like the common Silver Fir, spreading, flat, and horizontal, with the smaller ones opposite, and thickly clothed with foliage; buds oval, rounded on the points, smooth, in threes, the middle one the longest, imbricated, and surrounded with numerous narrow membranaceous scales, in several elose tiers, which remain at the base of the shoots, afterwards, for some years. C'ones cylindrical, blunt-pointed, straight, but somctimes slightly curved, and on short footstalks, threc inches long, and one inch broad, thickly covered with closely imbricated brown scales. Scales broad, wedge-shaped at the base, rounded on the upper margiu, and slightly crenulated, numerous, deciduous, thin, flat, imbricated, membranaccous round the cdges, and slightly toothed, thickest at the base, of a dull brown colour; and falling off the axile in the autumn after the seeds are ripe; bracteas projecting,
stiff, and acute. Sceds triangular and soft, with broad wings. Seed-leaves in fives.

A tall trec, with the appearance of the common Silver Fir found, according to Dr. Siebold, on the Japan Islands of Nippon, and Jezo, and frequent in the provinees of Matsu and Dewa, at an ele vation of 2000 or 3000 feet. The Japanewe distinguish different varieties under the names of "To-Momi," from the north of China, and the "Jezo-Momi." nr the " Nire-Momi," of Japan; this last is distinguished by its leaves sloping moro towards the ends of the branches, and by the eones being mueh shorter. They also distinguish a kind with the ends of the leaves decply divided (bifid) ; but such variations appear to be produced by elevation, climate, and soil, and are, as well as Dr. Siebold's Abies homolepis, mothing but the species altered by such cirenmstances. In Japan it is called "Uro-Siro" (leaves white beneathi), and "Sjnra-Momi" (white, or Silver Fir).

> No. 7. Picea Frisemi, Lenedm, Fraser's Silver Fir.
> Syur. Abries bialsamea Fraseri, spach.
> Fraseri, Lindley.
> " Pinns Fraseri, Puish.

Leaves solitary, seattered all round the shoots, or irregularly two-rowed, linear, flat, slightly emarginate, or bluntly pointed, deep-green above, silvery beneath, shorter, and more erect than those of the Balur of Cilead Fir, and denser on the bramehes. Cones ereet, oblung egre-slaped, two inches long, and rather more that one inch broad, and singly on the upper surface of the branches. Seales orbicularly wedge-shapen, and half an inch hroad ; bracteas inversely heart-shaped in the upper part, sharp-puinted, half projecting beyond the seales, reflexed, or bent backwards, very broad, and in regular rows.

A suall tree, growing from 15 to 20 feet high, thickly set with rather flat hranches and branchlets, found on the mountains of Carolina and Pennsylvania. It is the Double Balsann Fir of the Americmins.

There are the fullowing varieties:-

Picea Fraseri glauca, Irm. Paul, the Glaucous Douhle Balsan Fir.
This is a fine, robust varicty, with the leaves thickly placed all round the shoots, and of a beautiful silvery white beneath.

There are plants of this handsome variety in Mri. Wm. Paul's nursery at Waltham Cross.

Picea Fraseri Hudsonica, Knight, the Hudson's Bay Silver Fir.
Syn. Picca Frascri Hudsonica, Loudon.

$$
\begin{aligned}
& " \quad \text { "Hudsonica, Ilort. } \\
& " \text { " balsamea prostrata, Knight. } \\
& \text { " Abies Hudsonica, Bosc. } \\
& " \text { " Frascri nana, Hort. } \\
& \text { " } \\
& \text { " balsamea prostrata, Knight. }
\end{aligned}
$$

This is a very dwarf varicty, not growing more than three or four feet high, but forming a dense, close bush with a flat top.

It is found in the Hudson Bay Compauy's territory in North America.

> No. 8. Picea holophylla, Gordon, the Mandschurian Silver Fir.

Syn. Pinus holophylla, Parlatore.
„ Abics holophylla, Maximowicz.
Leaves erowded, and somewhat arranged in two rows, short, rigid, straight, or slightly curved, linear and flat, with a narrow furrow along the upper surface, and striped on both sides of the prominent keel on the under side with white, and three quarters of an inch long, and nearly one line broad; petiole dilated and a little twisted. Cones solitary, oblong-cylindrical and erect on the upper side of the branches. Scales resinous, broadly-dilated, rounded, and entire on the margins, and three quarters of an inch long and one inch wide; bracts ovate, toothed on the edges, abruptly pointed, and much longer than the seales. Seeds soft, angularly wedge-shaped, and full of turpentine. Wings somewhat quadrilateral, persistent, and of a yellowish colour.

A large tree, found at Port May; in the south-eastern part of Mandschurin, in Eastern Tartary.

No. 9. Picel sobilis, Loulon, the Noble Silver Fir.
Syn. Pinus notilis, Dourglus.
Abies mohilis, Limedlfy.
Leaves solitary, crowded, irregularly two-rowed, mastly on the upper side of the branches; one inch and threc-guarters long, flat, linear, fiteate, compressed, and turned upwards, dull green above, and silvery benwath. Cones solitary ou the muper part of the top branches, cylindrical, thick, and rather obtuse; six or seven inches long, and two inches and three quarters hroad. Seales triangular, with the edges incurved, entire ont the margin, and without the hract, one inch and a quarter loncs, and the same broad Bracteas projecting, imlricated hackward, and longer than the scales; jatored round the edges on the exposed part, five-cighths of an inch long, and with is long amd rather homb point or tail in the midelle. Seeds small, angular, soft, and with the winges one inch and a quarter in length, and five-eighthe of :un inch broal in the wilest part.

A noble tree, growing enor feet high, with regular, horizontal, yreading branches, and cimnamon-colonred bark. It is found growing on the North- West Coast of North America, along the banks of the Colnmbia River, and on the mom taims of Northern California. Mr. Jeffrey found it un the Shasta Mountains at an clevation of from 6000 to solou feet, a tree $2(0)$ fect high and four feet in diameter, growing in a red lomy soil.

This majestic tree, acending to Douglas, forms vast furests monn the mountains of Northern California, and produces excellent timber. IIe says, "I spent three weeks in a forest emmpersed of this tree, aurl day by day could not cuane for whire it." The Indians alonge the Colnmbia River and un the north-west emat call it Tuc Tuc (Big Trew).

## Picea nobilis glauca, Hôt.

A splendid variety, with all the leaves of a beautiful silverywhite colour. It is in the Nursery of Mr. Riehard Smith, of Woreester:

No. 10. Picea Nordmanniana, Loudon, Professor Nordmann's Silver Fir. Syn. Abies eandieans, Fischer.



Leaves solitary, in a double series, two rowed, eurved upwards, nearly equal in length, flat, linear, and one ineh long, with the point emargimate; deep glossy green above, and ehannelled below, with a glaueous white line each side of the mid-rib, cqual in breadth to the keel, and thiekened margins, and more or less twisted at the base. Branehes, dense, and regularly disposed in whorls, the lower ones horizontal, the upper ones rising at a more aeute angle. Cones, on very short footstalks, erect on the upper side of the branehes, five inches long, two inches and a half in diameter, and egg-shaped, a littlo blunterl at the ends. Scales closely adpressed, eup-shaped, very obtuse, nearly one inch and a lalf in breadth, and the same in the full length; somewhat recurved, smooth, entire, and falling oft' when the seeds are ripe. Brateas adhering to the narrow base of the seales, but afterwards free and extending beyond the seales, getting wider by degrees from the base outwards, marely ovate, often cordate, reflexed at the apex, and ineumbent on the lower seale, witl the point a line and a half long. Sceds triangular, soft, two under eacli seale, and ripe in September. Wings obliquely expanded and membranous, with the
inner margin straight. Stem, exceedingly straight, and from eighty to a hundred feet highl, and tlrece fcet in diameter, with a smooth bark when full grown.

This benutifnl trec is common on the Crimean Mountains and those cast of the Black Sea. Professor Nordmann, of Odessin, discouered it first on the summit of the Adshar Mountains, towards the sources of the Kur, at an clevation of 6000 feet, and M. Witmann observed it on the southern declivity of the mountains between Cartalin and Achalzich, ass fir up as the Alpine regions, growing amongst a forest of Abies Orientalis, and nearly 100 feet high. The tinver is grood and harder than that of the celcbrated Oriental Spruce.

The yound shoots of this tirir are quite smooth and glossy (hence the name leioclada), and its timber is said to be much larder than that of the common Silver Fir. A truly beautiful trec, from its lenves being very silvery beneath, and the great abundance of its large, purplish strobiles, which are produced on the upper side of the branches.

It is perfectly hardy, and commences growing late in the spring.

No. 11. Picla pectinata, Loudon, the Common Silver Fir.
Syn. Abies taxifolia, Deafont.

| " | " | vulgaris, Poirct. |
| :---: | :---: | :---: |
| " | " | Picea, Linulley. |
| " | " | argentea, De Cluamb. |
| , | " | alba, Miller: |
|  | " | pectinata, De Cenclole. |
|  | Picea | taxifolin, Mort. |
|  | Pinus | Picca, Wrilld., not Tournefort. Abics, Duroi. |
| , | " | pectinata, Lamarck: |

Leaves solitary, flat, obtuse, and two-rowed, with their points turned ip; from three quarters to an inch long, stiff, and of a shining dark green above and with two lines of a silvery white on cach side of the mid-rib bencath. Cones from six to seven!
inehes long, and from one and a laalf to two inehes broad, eylindrical, ereet, on the upper side of the branches, green when young, afterwards reddish, and when ripe of a brown colomr. Seales, one inch and a quarter long and the same in breadth, rounded, and thin at the margins, with a long bract fixed on the back of each, and extending beyond the seale, and terminating in a sharp flat point. Seeds soft and full of turpentine, angular, enveloped, and surmounted with a membranaceous wing, broader above than below. Seed-leaves five in number.

A lofty tree, growing from cighty to one liundred and fifty feet high, with an ereet stem, regularly furnished with whorls of branches, which stand horizontal, and a trunk frequently six or eight feet in diameter.

The Common Silver Fir is found all over the Alps, from enst to west, and on the Alps of Pieclmont. It is principally found at an elevation of from 2000 to 4500 feet, and grows on the whole chain of the Apennines, from north to south, and on the mountains of Middle Europe, but is not found on the mountains of the Nortl of Europe. It is also found on the Pyrenees, is eommon on the higher mountains of Grecee, and has the following varieties:-
Picea pectinata pyranidalis, Hort, the Pyramidal Common Silver Fir.

> Syn. Abics pectinata pyramidalis, Carrièrec. " Picea pyramidalis, ITort.
> $"$ " taxifolia lyramidalis, Mfalooy.

The branches of this varicty of the Common Silver Fir are turned upwards on the main stem, but with their ends and branchlets curved, and more or less drooping.

It has a narrow, conical head, resembling that of the Lombardy Poplar in outline, lout with a drooping appearance when elosely inspected. A very striking variety, of German origin.

Picea pectinata fastiglata, Booth, the Upright Common Silver Fir.

$$
\begin{aligned}
& \text { Syn, Abies pectinata stricta, Cumrière. } \\
& \text { " " Metensis, IIort-Peris. } \\
& \text { " ". pyramidalis, Metensis, Cumière. } \\
& \text { " Picea peetinnta Metensis, Horl. } \\
& \text { " " Metensis, Mort. }
\end{aligned}
$$

Leaves short, slender, frequently curved upwards, and much smaller than those of the species.

This singular varicty origiuated at Metz, in France, and differs from the preceding German one in having its branches and branchlets more erect, slenderer, thinner, and much eompressed, and in the full-grown trees having an crect pyramidal shape like the Lombardy Poplar.

## Picea rectinata xana, Kinight.

Sym. Picea cincrea, Bummann.
" Abies prectinata prostrata, Hort.
A very dwarf variety, growing one or two feet high, and smaller in all its parts; of French origin.

Picfa pectivata iemdela, Godefioy.
This differs in having all its branches and twigs drooping.
It is of French origin, and curious.
Picea pectinata tortuosa, Booth.
This rariety has its branches and branchlets very much twisted and crooked, which gives it a very singular appearance. It is of Cerman origin.

## Picea pectinata variegata, Hort.

This varicty has some of its leaves pale straw colour, or white, intermixed on the branches and young shoots, which gives the trec at mariegated appearance.

No. 12. Picea Religiosa, Loudon, the Sacred Silver Fir.
Syn. Abies religiosa, Lindley.
" $\quad$ " hirtclla, Lindley.
" Picca hirtclla, Ioudon.
" Pinus hirtella, ITumboldt.
" " religiosa, Ifumboldt.

Leaves solitary, from one to one inch and a half long, linear, and rather thinly sct on the branches; quite entire, bluntly pointed, and rather irregularly two-rowed, flat, deep green above and silvery beneath, especially when young, but when old both sides are nearly the same colour. Branches rather slender, and when young covered with hairs; but when fullgrown and old, quite smooth. Cones erect, with a short footstalk, roundish egg-shaped, five inches long and two and a half wide, and of a purple colour when young. Scales broad, rounded, or kidncy-shaped on the upper margin, one inch and a half broad, entire, and rather thick at the margin. Bracteas longer than the seales, projecting, and reflexed backwards orer the scalcs, very broad, short-pointed, and with an even edge. Seeds rather large, angular, and soft, with transparent wings. Secd-leaves five in number.

An elegant tree, attaining a height of 150 fect, with a smooth brown bark, and rather thin of branches.

It is found on the mountains of Mexico. Schicde found it upon the cold mountains of Orizaba, at the highest limit of arborescent vegetation. Hartweg found it in various places in Mexico between $15^{\circ}$ and $22^{\circ}$ of south latitude, but its chicf range is about $19^{\circ}$ of south latitude, and at an elevation of 9000 fect. He also found it on the Campanario, the highest point of the mountains of Anganguco, five or six feet in diametcr, and 150 feet high.

It is the Oyamel of the Mexicans, and is largely used for decorating their churches on particular religious observances.

It is more or less tender, and has the following variety :-

Picea religiosi Glaucescens, Gondon, the Silver-leavel Mexican Fir.

> Syn. Abies glaucescens, Roezl. ". " glauca, Roczl. " " Tlapalcatuda, Rof=l.

Leaves longer and more silvery on both silas than thoie of the Uyamal Fir, but in other respects very similar. Cones also like those of Picear religiosia, but brouler, inl furmished with large, reflectel bracts, which are very much longer than the seales, except $n$ mar the aprex of the cone, where they are inostly wanting. Bractens much buger than the scales, bent backwards, very broal, spoon-shaped, frimel round the morgills, and furnishel with a long, tapering point, quite entire on the eilyes.

A beautiful glancous varicty of the Mexican Silver Fir, found growing on the "Mont de las C'rnece," in Mexien, hy M. Roeal, who says the leares are so glancons, or silfery on each side, that, at a great distance, one would dectare the trees were coverel with snow, and that they are meh whiter than the ('edrus Dendara, on choser inspection. The cones, when youndr, are of a bright green colour, whereas those of the species are deep purple.

Soction. II. BREVIBRACTEATA, or THOSE KINDS WITII tife bracteas shorteir thas the scales, and enclosed.

No. 13. Picen ambibisis, Loudem, the Lovely Silver Fir.
Syn. Pinus amalilis, Dougles.
" ", lasiocarpa, Hooker.
, Abies amabilis, Lindley.
" " lasiocarpa, Limedry.
Leaves, solitary, linear, flat, entire, blunt-pointed, one inch long, irregulanly and densely two-rowed, incurved on the upper side of the branehes, bright green above and glatueons helow. Branches irregular on the main stem; lateral ones numerous,
tolerably flat, and densely covered with leaves. Cones, ereet, solitary, large, ovate-cylindrical, six inehes long, and two inches and a lialf broad, slightly tapering to both onds, and woolly when young. Scales, smooth, round, and entire, an inch and a quarter broad, and about the same long, and falling off when the cones are ripe. Bracteas very short, and concealed by the seales. Seeds, angular and soft, with membranaceous wings.

A magnifieent tree, seen towering above all others in its native forests in Northern California, growing 200 feet high on the mountains east of Fraser's River, in latitude $50^{\circ}$. Mr. Jeffrey found it growing on the sloping sides of the mountains at an elevation of 4000 feet, with the leaves very small, darkgreen above, and silvery beneath, and with the branches horizontal, short and bushy, growing 250 feet high, in a gravelly soil, and fivo feet in diameter, with sixty feet of the stem without branches; the bark of the young trees are covered with large blisters, filled with resinous matter.

It is called "Mareilp" by the American Indians, and is quite hardy.

No. 14. Picea Cilicica, Rauch, the Cilician Silver Fir. Syn. Abies Cilicica, Carrière.

| " | " | Tehugatskoi, Lawson. |
| :---: | :---: | :---: |
| " | " | Sibirica alba, Fischer. |
| " | , | Pichta alba, Hort. |
| " |  | Fisheri, Loudon. |
| " |  | Rinzi, Hort. |
| " | Pice | Sibirica alba, Hort |
| " | " | Pichta alba, Hort. |
| , |  | ,, longifolia, Hort. |
| " |  | Rinzi, Hor't. |
| " | Pinu | s Cilicica, Kotschy. |
| " | " | Tehugatskoi, Fischer: |
| " | " | Sibirica alba, Fischer. |
|  | " | Pichta longifolia, Hort. |

Leaves densely and irregularly arranged in two rows, and
more or less horizontally placed along the branchlets, but somewhat seattered all round the louding shoots; and from one to one inch and three quartere long, and rather more than one line broal, quite straight, linear, flat, long, and narrow, with the cuds bideuterl, and the base twisted ; of a lark shining green on the upper side, and quite glacions behw, except on the mid-rib and margins, which are of a deep green colour. Tranches minstly in whorls, thickly set un the stem, from the base upwards, the lower ones being herizontal, but as they aseend the stem, they set gralually shores and more elevated at their points; lumehlets and smaller spray, slender, rather short, flat, much divided, sprealing, and thickly set in two horizontal rows along the bramehes. Male catkins on footatalks, cylindrical, aml romuled at the end:. Cones erect, from seven to cight inches long, and nearly two incles in diancter, of a 'ylindrical shape, rounded at the base, and ohtuse at the apex, with a concave chepresion in the contre, and so numerons on the upper side of the top branches, as to give that part of the tree quite the appearance of a large candelabrum full of wax lights. Sicales concave, chosely imbricated, and of a leathery texture, from three quarter: to an inch hroad, and one inch deep on the exposed part, with the upper marrin transversely elliptic, fuite entire on the chges, and very thin. Bracteas small, strap-shaped, a little contractel at the top, erenated along the enges, and firnished with a central point, and ent tircly hidelen by the sealer. Seeds sinft, full of tmepentine, somewhat three-comered, and furnished with oblique wedgeshaped wing.

A handsme tree, of a pyramidal shape, thickly furmished with bertical branches to the groumd, and growing fifty feet high, and three feet in diameter, with the stem eosered with it thick ashy-gray endourel hark, full of deep fissures when ohd.

It is finmo on the 'Jamian and Cammanam momentans in Asia Minor ; MI. Ratsehy diseovered it in one of the valleys of the Tamrus, to the north-west of the great Cilician defile, eallew (iullah Boghos, and on the southern slope of the great moun-
tain ehain ealled Bulgardah, in Cilieia, at an elevation of from 3000 to 7000 feet above the sea, mostly in immense forests, or intermixed with the eedar of Lebanon. The Mongolians eall it "Chadsura" (green and white), and the late Dr. Fiseher considered it only a variety of the Siberian Piteh Fir (Picea Pielita), a kind whiel it eertainly very mueh resembles, but differs from in having very mueh longer eones, and leaves more silvery beneath.

It is quite hardy, and ealled "Tehugatskoy" (strong-seented Fir) by the Russians.

No. 15. Picea concolor, Gordon, the Coneolor-leaved Silver Fir.

Syn. Pinus eoneolor; Parlatore.
," Abies eoneolor, Lindley.
Leaves elosely placed, somewhat two-rowed, and the same colour on both surfaces; they are linear, flat, leathery, and eitlier slightly faleate or straight, more or less obtuse at the points, of a whitish eolour when young, pale green when old, and from one and a half to two inehes long and one line broad. Cones solitary, ereet, nearly sessile, oblong, rounded at the ends, and from two inehes aud a quarter to two and three-quarters long, and from one ineh and a quarter to one and a half broad. Seales almost horizontal, elosely placed, a little turned up at the edges, transversely elliptic, with the margins rounded and nearly entire. Braeteas, shorter than the seales and hidden. Seeds soft and angularly wedge-shaped, with thin, broad, persistent, and somewhat four-sided wings.

A magnifieent tree, with horizontal braneles in regular whorls, found on the Santa Fé nountains, in New Mexieo, by Fendler; and on the Rio de los Animos, in Southern California, by Engelmann.

No.16. Picea grandis, Loudon, the Great Californian Silver Fir. Syı. Pinus grandis, Douglas.

## Syn. Abies grandis, Lindley.

Gordoniana, Currire.
Leaves linear, Hat, chamnelled above, cmarginate, or with a small notch at the point, and all irregularly arranged, horizontally in double rows on each side of the branchlets, in a more or less pectinate manner, on short twisted foutstalks; thoso forming the upper tiers on each side of the shoots are much the shortest, and little more than three quarters of an inch in length, while the majority of thone comprising the under series are of varions lengths, and nearly double that of the upper ones, but not broader, and all of a deep glossy green above, and with two silvery white bunds helow, between the mid-rib and thickened margins, both of which are of a bright green colour. Branches mostly in horizontal whorls, flat, and spreading. Branchletsis glossy; smooth, rather short, compact, and placed laterally in two horizontal rows, and when young, with quite a varnished appearance. C'ones erect, cylindrieal, and from three and a half to fom inches long, and one and a half inch broad. Scales broad transversely, crescent shaped, rommed on the exposed part, incurved at the edges, closely placed, toleralily equal in size, downy externally, deciduons when fully matured, and with the sinall fringed dorsal bracteas entirely hidden ly the overlapping seales; seeds small, angnlar, soft, and with persistent wings, three quarters of an inch long. Seedleaves five in number:

A noble tree, always found in moist valleys, growing from 150) to 200 feet high, with a brown sealy bark, and very much resembling the common Silver liie when old, but differing in the joung shoots having a glosisy or polished ippearance, and in its much smaller cones, with hidden dorsal bractens.

It was finst diseovered in 1831, by Douglas, in Northern Califormia, growing along the banks of rivers. Jeffrey found it on the bauks of Fraser's River, from the Falls, all the way down to the orem, but particularly on the alluvial banks of the river near Font Jandeley, growing 2s0) feet ligh, five fect in dianeter, and fifty feet without branches, It is also fonnd on
the banks of the river at South Umpqua, and in Vincouver's Island, and, according to Fendler, on the Rocky Mountains, But not common.

It is quite hardy, not having been in the least injured by the winter of 1860-1 ; but the plants suffer more or less from the late Spring frosts, as they commence growing carly in the season, which is not the ease with either Pieca Lowiana, or amabilis.

No. 17. Piced Lowiñt, Gordon, Messris. Low's Californian Silver Fir:
Synı. Picea grandis, Lobb, not Douglas.
" $\quad$ lasiocarpa, Hort not IIooker.
" " Parsonsi, Hort.
" Lowi, IJoit.

Leaves long, linear, flat, and quite straight, elannelled above, more or less twisted at the base, wather distant and strictly arranged in two horizontal rows along the shoots, and from one and a half to two and a half inches long, and one line broad, blunt pointed, or with a slight notch in the centre, particularly those on the adult trees, and all of a dull, glancous green above, but muelı paler, and with two faint glaucons bands below, between the elevated mid-rib and thickened margins. Branches in distant whorls, horizontally placed, and rather slender. Branchlets more or less opposite, quite smooth, slender, laterally plaeed in two horizontal rows, and of a pale yellowish colour. Cones from three and a half to five inches long, and one inch and a half broad; ureet, cylindrical, and obtise at the points, rounded at the base, of a pale brown colour, and emitting numerous transparent resinous tears externally, and very similar in shape and general appeatance, but somewhat larger than those of Picea grandis. Scales broad, more or less crescent-shaped, rounded on the outer side, incurved round the margins, woolly on the exposed parts, tolerably equal in size, and deeiduous when fully matured. Bracteas very minute, dorsally placed at the base of the seales; broader than long, somewhat rounded, wedge-sliaped on the upper part, toothed
ar fringed round the edges, ame with a prolunged sharp point in the centre. Sceds angular, solt, and with broad hatchetshaped persistent wings.

A noble tree, frequently upwards of 2.50 feet in height, and five or six feet in diatneter, found in British Columbia and Northern California, but always in valleys or along the allnvial hanks of rivers.

This very distinct species appears to have been first diseovered by Mr. William Lobb, who mistonk it for the l'icen grandis of Douglas; * an urror casily accountel for, on account of the great similarity of the conns and nsual habitat of the tree, both kinds being always foum in damp valleys, or along the alluvial lanks of rivers, and never its monntain trees.

It has heen mamed in compliment to Mussis. Low, of the Clapton Nursery; who first introlucel it from Californiat.

It is quite hardy, never getting in the least injured hy the late spring frosts, and very distinct from Picea gramlis in its pale green colour, and in the size and shape of the cones.

No. 18. Piced maginifica, Muray, the Pompons Silver Fir. Syn. Abies nohilis robusta, Carrièr.
"Picea amabilis, Loll not Donglus.

$$
\begin{array}{lll}
" & " & \text { robusta, } \text { Hort. } \\
\text { " } & \text { magnifiea, } \text { Hort. }
\end{array}
$$

Leaves linear, narrow, blunt pointed, somewhat four-sided, gitbose, sessile, and crowded on the upper side of the lnanches in an incurved and upright position; lout spirally arranged, thickly, all round the branchlets; and when young of a pale, glauculis green, and when old, dull green, with two pale, dotted glancous bands beneath, and a thickened midrils on both surfaees, and one inch and a half long, and about threequarters of a line broad. Buds scaly, blunt pointed, deep brown, and often very resinous. Branches stout, rigid, horizontal, and in regular whorls; lateral ones numerous, rather short,

[^5]stiff, and spreading. Shoots and branehlets straight, deep brown, and when young eovered with a downy substance. Cones erect on the upper side of the branches, nearly eylindrical, obtuse at the points, rounded at the base, light brown, and from seven to nine inehes long, and from two and a half to three inches in diameter, and very similar to those of Pieea amabilis, except in size. Seales ereseent-shaped, and pale brown on the upper part, triangular and wedge-shaped at the base, thin, and slightly ineurved round the edge of the exposed part, elosely imbrieated, and with a copious supply of transparent resinous matter exuding from beneath the seales; the larger seales are two inehes wide, and one ineh and a half deep, and deeiduous when the seeds are ripe. Braeteas small, ovate-pointed, fringed round the edges, dorsally placed, and entirely hidden by the overlapping seales. Seeds angular', soft, and covered with is thin testa, and furnished with broad persistent latelhet-shaped wings, straight on the inner side.

This magnifieent Silver Fir is found on the Sierra Nevada, to the eastward of San Franeiseo, in Upper California, forming immense trees, resembling Pieea Nobilis.

It is perfeetly hardy, and eommences growing late in the spring, and consequently never gets injured by the late spring frosts in England, as is the ease with Pieea Webbiana, Cephaloniea, and Grandis.

No. 19. Picea Numidica, R. Smith, the Algerian Silver Fir. Syn. Abies Numidien, De Lamnoy.
" " Baborensis, Cosson.

Leaves linear, straight, spreading, flat, rather stiff, and either slightly bidented at the ends, or sometimes obtusely pointed, of unequal lengths along the branchlets, twisted at the base, and thickly and irregularly arranged in two horizontal rows on the young shoots; but they afterwards stand up, and are so numerous on the rigorous branchlets as to entirely eover them when fully grown; they are of a deep, glossy green, and slightly channelled above, with two slightly sunken glaueous
white bands between the bright green keel and thickened margins on the under side, and from hnlf an iuch to an inch long, and wather more than a line wide. Branches in numerous spreading whork, and much ramified, the upper ones some what ascending at the ends, the okler or lower ones slightly bent downwards, rather slender, and cuvered with comparatively small leaves. Buds large, mostly terminal, sometimes resinons, and covered with loosely imbricated, light brown scales, which are somewhat persistent. Cones eglimtrical, ereet on the upper side of the two-year old hamehes, wften four or five tngether, ivery rarely solitary, aml from tive to eight inches long, and from one and threc-quanters to two and a quarter inches in diameter. Se:ales small, reniform, stipitate, very thin, amd entire on the colges, of an a.h-gray colour, and very deciduous. Sceds suft, irregularly three-sided, with thin, membranenus iwings, romeded, and truncato at the top, and of a prayish wed colour. Bracts inclowed or hidden by the seales, seariose, and of a redlish-hown colour, and ncarly as large as the immer face of the scale.

It forme a very handsome, enmpact, conical tree, from to th 60 feet high, with the hranches in whorls, and much ramified, and a straight stem sixteen inches in dianeter, covered with an ashy gray bark slightly furrowed.

The Numidian Silver Fir is found in the same furests as the Athas Cedar, on the top of the momentains of Babor and Kabylia (the Numidin of the Romans) in the province of Constautine in Algerin.

It is yuite harely, and very distinct from Picea Pinsapo, of which some writers make it only a variety:

Syon Albies Pichta, Fischor:
Sibirica, Lerlebont:
"Pinus Sibivica, Strudel.
". "Pichta, Fisidni.
Picen Sibirica, Horl.
Leaves solitary; irregnlarly two-tuwed or seattered, and rery
thickly set round the branches, lincar; blunt-pointed, flat, dark green, with a very slight trace of the glaucous appearance on the under side, and mostly curved upwards towards the point. Branches at first horizontal, but afterwards, as they get older, become rather pendulous at the extremitics. Cones ereet, eylindrical, tapering towards an obtuse end, three inches and a quarter long, and an inch and threc quartcrs broad at the widest part, a little below the middle. Scales obovate wedgeshaped, largest and broadest near the base, rounded and entire on the margins, and quite smooth. Bracteas hidden by the scales, quite short, round, irregularly toothed, and convex externally at the cdges, with a large point or tail in the middle. Seeds small, angular, soft, and with membranaceous wings nearly as large as the seales.

A middle-sized tree, with rather a dense head, growing from 30 to 50 feet high, at an clevation of from 2000 to 5000 feet, on the mountains of Siberia and the Altai, forming entire forests.

It is the "Ak-chcrschal" of the Tartars, and the "Chadsura" of the Mongols, and is quite hardy, but suffers greatly from the late Spring frosts, as it commenees growing very early in the season.

No. 21. Picea Pindrow, Loudon, the Upright Indian Silver Fir.
Syn. Pieea Herbertiana, Madden. Naphtha, Knight.
Abics Pindrow, Spach. Wcbbiana affinis, Hort. Pinus Pindrow, Royle. Taxus Lambertiana, Wrellich.
Leaves solitary; flat, and at first all round the shoots, but finally disposed into two rows on the branchlets horizontally, with the upper surface of the deepest green, or almost black when fully matured, and the under one with two faint, white, silvery lines, and from an inch and a half to two inches and a half long, and rather more than one line broad, with acutely two-
toothed points. Branches, in whorls, horizontal, and spreading. Branchlets opposite in two rows. Cones, crect, solitary, four inches and a half long, and three inches and a half broad, eylindrical, or elongated, flat at the ends, deep purple, smooth on the surface, and growing on the upper surface of the top branches. Scales decidnous, trapeziform, stifl and leathery, with the upper margins entire and wedge-shaperl at the base. Seeds, soft, angular, full of turpentine, and ripe in October. Wingrs long and ample.

A nolle tree, growing finm $8(0)$ to 100 feet high, with flat, horizontal branches, in regular distant whonls, found abundantly in Photan, from 11,000 to $1: 2,0(0)$ feet of eleration. In Kamaon it is found at from $\overline{500}$ to 9000 feet of elevation, where it clothes the sumrees of the "Kosilla" in il ferest of unusual glom and thickness. It also grows on the castemmont ange of the Himalayas, where it is called " layba," also on the Choor and Kedarkanta Mountains, at elevations of from Sano to l2, (000) fert, and on all other ranges of similar heights, where the trunks attain a great girth and height,-some of the trees on the ('hoor Mountains meaburing twenty feet round at five feet from the ground, and upwards of $1: 00$ feet high, with the stem densely elothed with short, scrubly boughs, bearing little propurtion in length to the height of the tree, and gencrally ending in a mass of that, deelining branches.

The Indian term, "Pindrow," according to Major Madden, refers to its very peculiar mode of growth, the tree being tall and eylindrieal, or slightly tapering, like the Lombardy Poplar ; hut, aceording to Dr. Wilson, it is derived from the Sanscrit worde, "Pind," incense, and "Roo" or"Row," to weep, from the ummerons resinoms tears found on the cones and other parts of the tree. It is atso called "Kata-rai" (13tack Fir) by the people ahong the snowy mometains, who also apply the term "Kalahmi" (black loorest) to the woods where it alone grows: from the dark green of the leaves on the upper surface, giving the trees a sombre yew-like appemanee at a histanes, and which causis the memotainecrs constantly to confoumel it with the
"Thooner" (Yew), and which no doubt led Dr. Wallich (who trusted too much to local names) to give to this Fir the name of 'Taxus Lambertiann, he not having at the time seen its cones, or even probably the living tree. Its Khasiya name is Ragha, and the Bhotiyas call it "Woomun" (purple cone).

This tree forms dense forests on all the great spurs of the Kamaon Alps, from 7.500 to 9000 feet of elevation, but under proper conditions it will ascend and descend above and below these elevations, always, however, exhibiting its preference for northern and western aspects. Mr. Winterbottom found it plentiful on the Pecr Punjal in Caslmere, flowering in April and May, and ripening its cones, which are of the same rich purple colour as those of Picea Webbiana, in October and November of the same year.

This tree is quite hardy, but suffers from the late Spring frosts in England, and should be planted, when young, in a northern aspect, or sereened from the mid-day sun.

Timber good, but soon warps and rots if exposed to rain and sun.

Picea Pindrow variegata, Hont, the varicgated Indian Silver Fir.
This is a constant variety, with the leaves striped with yellow.

No. 22. Picta Pinsapo, Loudon, the Pinsapo Fir. Syn. Abies Pinsapo, Boissicr.
" " Hispanica, De Chamb.
" Pinus Pinsapo, Encllicher:
Leaves solitary, regularly and thickly disposed around the branches, short, not more than lalf an inch long, and placed at right angles on the branches, very stiff?, sharp-pointed, flat on the upper surface, and with a central rib slightly marked on each side by two furrows, which forms the only and very superficial indication of the two silvery lines so strikingly conspicuous on the under stde of the leaves in the Silver Fir tribe.

Branches regularly in whorls on the main stem, very densely elothed with laterals even to their base, and scarcely extending any wider than those branches nearer the top, griving the tree a shape rather that of a eylinder than a pyramid; the young - shoots also have a cylindrical shape, on account of the leaves being so thickly placed at right angles all round the stem. Bark darker in colour and more sealy than that of the common silver Fir. Cones erect, in great numbers on the upper part of the top branches towards their extremities, and without any foot-stalks; oval, cylindric, terminating aloruptly at the top, ofter with a suall clevated point, and from four to five inches long, and from two to two and a half inches broad. Scales rounded, entire, and lioad in the exposed part of the cone, but rather wedge-shaped towards the base. Bracteas small, concealed by the seales, and never extended beyond them. Seeds angular, soft, and with membranaceous wings. Scedheaves seven in number.

A fine tree, sixty or seventy feet high, with a dense branching head, and timber full of resin, resembling in colour and structure that of the common Silver Fir.

It is found in Spain, on the mountains between Ronda and Malaga, in Granada, and forming furests on the higher parts of the sierra de la Nieve, at an clevation of from 4000 to 6000 feet. It abounds in all the higher mountains, particularly on the northern exposures, reaching even near the summits, whero the snow lies at lenst four or live months in the year.

There is the following variety :-

## Picea Pissapo variegata, Iort.

Syn. Abies Pinsapo variegatil, Carrière.
". Pinus Pinsapo variegrata, Lauson.
This variety differs in having a portion of its lenves, and smaller shoots, of a pale yellow or straw colour, internixed with the ordinary bright green ones.

No. 23. Picea Veitchif, Hort, Veitch's Silver Fir. Syn. Abies Veitchii, Lindlley.<br>Pinus selenolepis, Perrlatore.

Leaves linear, flat, and all thickly arranged in an incurved manner on the upper side of the branchlets; obtuse or emarginate at the points, keeled, glaucous, concave, and streaked with white on the under side, and varying from six to twelve lines long, and three quarters of a line broad. Branches rather stout, with the cones from two and a quarter to two and a half inches long, and two and three quarter inches in circumference ; somewhat cylindrical, blunt pointed, and erect on the upper side of the branches. Scales rounded on the upper part, flattened and half-moon shaped, with a foot-stalk below. Bracteas hidden, but even in length with the scales, wedge-shaped, and terminating in a little point or prickle. Sceds testaccous, two lines long, angular, crested, and with short acinaciform wings, having a ver'y narrow curved crest at the base.

A fine tree, growing from 120 to 140 feet ligh, found on the sacred Mountain Fusi-Yama, in the province of Surunga, on the Island of Nippon, in Japan.

It looks likes a small-coned Silver Fir, but is essentially different from that or any other Silver Fir, and has been named after Mr. J. G. Veitch, a plant collector in Japan, who sent sceds of it to England in 1861.

No. 24. Picea Webbiana, Loudon, Capt. Webb's Indian Fir. Syn. Abies Webbiana, Lindley.

|  | " | spectabilis, Spuch. |
| :---: | :---: | :---: |
| " |  | densa, Griffith. |
| " |  | Chilrowensis, Hor't. |
|  | Pinus | striata, Hamilton. spectabilis, Lamber |
|  |  | tinetoria, Wallich. |
|  |  | Webbiana, Wullich. |

Leaves solitary, at first scattered all round the shoots, but finally more or less arranged in two rows laterally, from one
: to two inehes long, linear, flat, leathery, bidented on the ends, of a dark glossy green above, and furnished with two broad iwhite bands below. Branches in regular whorls, horizontal, and spreading. Branchlets opposite, two rowed, and stout. Buds oval, covered with brown scales, and resinous. Cones solitary, ercet, and of a rich purple colour, from six to seven inches loug, and about two and a half broad, cylindrical, hluntended, full of resinous matter, and growing on the upper surface of the top branehes. Scales decidums, regularly wedgeshaperd, leathery, dilated on the upper part, and quite round on the margins, regularly inbrieated, and provided at the base with wery short bracts, much shorter than the scales. Seeds soft, oblong, or angular. Wings thin, broad, and somewhat obovate.

A noble tree, growing from seveuty to cighty feet high, with in tabular-formed head when old, found abuudantly in the IHimalayas, at different elevations. Its lowest limit on the southern face of the Himalayas is 10,000 feet.

The Indian Silver Fir is the most abundant one in Sikkim, and forms vast forests in Bhotan, at elevations from 11,000 to 12,000 feet.

Dr. Hooker found it in Sikkim measuring thirty feet in girth. It also forms most dense and extensive forests on the nurth side of the Shatool-Pass, but on the south face it does not flourish. It is called Chilrow in the Northern Himalay:as, 'Oomum,' or Purple-eoned Fir, and the 'Raisalla,' or King Pine, in Upper Kamaon and Nepal.

This is the Black Fir, found so abundantly by Dr: Griffith on the Blotan Msuntains, at an elevation of from 11,000 to 12,500 feet, where it forms a lofty tabular or flat-headed tree, with the foliage of the deepest green on the upper surfaee, but quite silvery beneath. It is called "Rai-Sulla" (fragrant Fir), and "Golrea-Sulh" (fragrant or Indigo Fir), by the Corkhalees, om aecount of an indigo or purple pigment being extracted from the young cones. On the Choor Mountains the inlabitants call it "Kilount:," which is a Sanserit compound for end of the Pine tree, and denotes the fir-cone, so eonspicuous in this
species, on account of its beautiful purple or violet colour. In Kooloo, and on the Chumbra range, it is styled "Toss," and forms extensive forests, where, notwithstanding the whiteness of the under surface of its leaves, the general efficet of the Timalayan Silver Fir is exceoding dark and gloomy-more even than the Indian Cypress (Cupressus torulosa), which from a distance it a grood deal resembles; but still the thoroughgoing black Pindrow Fir, with its tall columnar outline and boughs, much less bushy or pendulous, and its longer leaves, must be pronounced the handsomest tree of the two.

Timber white, very soft, and coarse-grained, but full of clear white resin ; and a beautiful dye, of a lovely violet colour, is extracted from the young cones.

It is hardy, but sufficis from the late spring frosts.

## Gen. PINUS. Linncurs. The True Pines.

Flower's, moncecious, or male and female on the same plant, but separate ; the male catkins laterally placed in dense masses around the shoots in a kind of spike ; the female ones solitary, or in whorls, and terminal.

Cones, more or less conical, and woody.
Seales, numerous, persistent, more or less elevated, pyramidal, swollen, and imbricated.

Sceds, oval, with a hard bony shell, and either furnished with ample wings, or wingless.

Secd-leaves, numerous.
Leaves, in sheaths of two, three, or five in number; somewhat cylindrical, or concave on one side and convex on the other, persistent, and pointed.

The name Pinus is by some writers derived from the Greck word "pion" (fat), in allusion to its resin or tar; the Sanscrit word "Peena" having exactly the same meaning; while others derive its origin from our own fine, or the Latin finis, as well
as pin, in allusion to the slender leaves, which are aptly designatel "needle leaves" (Nadelholz.) by the Germans, and "accrosia" by botanists. Others, agrain, derivo Pinus from the Celtic worl "pen" a momatain, in allusion to the site where these trees grow, aml state that it is wholesome to walk in such groves, where the air is impregnated with the balsamic properties of "the Pine that breathes furth fragrance from cvery wound;" but the dry air and soil selected by Pines are more probably at the root of the salubrity: The term Fir most probally was terived from fire, the wood being very combustible, Pinc furents, in ancient times, lecing particularly sulject to be destroyed by that element, generally through the carelessmess of man, lut not unfrequently cither by lightning or the atetion of the sim's rays upon the dry, lecayed wood of fallen trees.

All exergreen trees, fimmed in Europe, $A$ sin, and Amerien, with one in Africa (P'. Chariem-is).

Section I. BLN.E, or thosi kinds having onle two leaves IN ELCH AHE:ATH.

No. 1. Pinus Austuina, Ifoss. Tho Anstrian Pine.
Syn. Pinus nigricans, Hows.

| ". | nigra, Link: |
| :--- | :--- | :--- |
| " | Laricio Austriaca, Emenlicher. |
| " | nigrescens, Hort. |
| " | ", Laricio nigricans, Purlatore. |

Leaves two in a sheath, slender, straight, and not wary; dark glossy green, fur or five inches long, erect when young, lint spreading and curved inwards when old; outer surface half romal, inmer chamelled, sharp-pointed, rough at the edges, and thickly set on the branches. Sheaths very short, scaly, tom at the ends, and almost disappearing when old. Branches horizulital, in resular whorls, sprearding, aurl with the ends corred upwards; smaller ones, shont, sealy, sud with a gray ish brown bark, regularly and deeply raised by the insertion of
the leave, furrowed and shining. Buds, ovate-pointed, eovered with long brown seales, fringed at the edges, and slightly resinous. Cones three inches long, one inch and a quarter broad, conieal, rounded at the base, and tapering regularly to the apex, pointing horizontal, or slightly inelining downwards; of a light yellowish brown enlour, with a slining surface. Seales numerous, hard, and glossy; larger ones rather nore than half an ineh broad, but much smaller, and less clevated towards the base, angular on the upper edge, rounded below, slightly pyramidal, with an elevated horizontal line across the eentre, terminated by a blunt, dark brown sear.

A large tree, growing 120 feet high, with spreading branches, and when old a flat top.

It is found on the ealeareous mountains in Lower Austril, Styria, Moravia, Corinthia, Transylvania, and in the neighbour hood of Mehadia, in Banat.

Timber strong, tough, and resinous.
Pinus Austriaca variegata, Luruson, the Variegated Austrian Pine.
A variety having some of its leaves straw eoloured, and intermixed with the ordinary grcen ones on the same branchlets.

No. 2. Pinus Banissiana, Lambert. Sir Joseph Banks's Pine.

$$
\begin{aligned}
& \text { Syn. Pinus Hudsonica, Lamarck. } \\
& " \quad \text { rupestris, Michanx. } \\
& " \quad \text { sylvestris divaricata, Aiton. } \\
& " \quad \text { " divarieata, Hort. }
\end{aligned}
$$

Leaves in twos, regularly distributed obliquely all over the branehes, one inch long, spreading, rigid, robust, dull greyish green in colour, thickly set on the branehes, and remaining for years. Sheaths very short, one tenth of an inch long, and rather jagged at the margin. Branches divaricate, sprcading, with fow laterals, long, slender, twisted in all direetions, and rather flexible. Buds full of resin. Cones small, horn-shaped, very hard, curved at the point, twisted, one and a half to two
inches long, widest at the lase, and tapering to a point; mostly in twos, of a gray ash colour, smuoth, always pointing in the same direction as the branches, and remaining on the tree for years. Scales rounded, one third of an inch wide, irregularly four-siled, and terminating in a protuberance, with a blunt point in the centre. Seeds extremely small, with little wings half an inch long.

A low, scrubby, straggling bush, or small tree, from five to ten feet high, but in grood soil and a favourable situation from fifteen to twenty feet high.

It is found in the most morthern parts of America; in the district of Maine, Nova Scotia, and among the rocks at Labrador ; at Halifax and Mudson's Bay it disappears, except in a few straggling hushes amongst the rocks. Dr. Riehardson describes it as a handsome tree in favourahle situations, and Douglas found it on the higher banks of the Columbia, and in the valley of the Rocky Momtains, of considerable size.

## No. 3. Pines Bolandert, Parlutore. Bolander's Pine. <br> Syn. Pims muricata, Ver. Bolander.

Leaves in twos, thickly set un. the branches, short, rigid, erectly-spreading, eurved, semiterete, chamelled above and deep green, with the margins slightly seabrous, and the points somewhat spiny, and from one inch and a quarter to one and a half long, and a little more than half a line broad. Branches in whorls. Cones from two to four in a whorl on the branches; the younger ones are somewhat hent downwards and subghobuse, and the adult ones nearly sessile, pendulous, pressed close together round the branches, and oblong-eylindrieal, somewhat obtuse, straight or slightly curved, and slightly uneven at the base, and two inches long and one ineh broad. seales quadrangularly-rhomboid, pyramidally elevated, sharply keeled transversely; convex above, with a prominent acute mucro, which is loner and reflexed. Seeds small and nearly 1,lack.

A sinall tree from ten to fifteen feet high, found by Bolander.
on the mountains of Nortlicrn California, and probably only a stunted form of Pinus murieata.

No. 4. Pinus Brutra, Tenore, the Calabrian Cluster Pine.
Syn. Pinus conglomerata, Graffer.
" " pyrenaica, Parlatore, not Loulon, or Cooli.
" " Loiseleuriana, Carriere.
" " Halepensis rotundata, Carrière.
" " turbinata, Bosc.

Leaves in twos, rarely in threes, from six to eight inches long, very slender; and wavy, glabrous, spreading, channelled above and convex below, serrulated on the margins, with a sharp point, and of a bright green colour: Sheaths half an inch long, of an ash colour, quite entire, and not falling off: Buds three quarters of an inch long, pointed, woolly, and free from resinous matter. Cones stalkless, generally in elusters, but sometimes singly on young trees, ovate, and smooth, two or threc inehes long, and flattened at the base, of a deep brown colour, and remaining on the tree for years. Scales depressed, umbilicate, and slightly concave at the apex.

A tall tree, seventy feet high, with many large spreading branches, thickly set with bright green foliage.

It is found growing, according to Professor Tenore, in Calabria, on the mountain of Aspero, at an clevation of from 2400 to 2600 feet, and resembles P. Halepensis, but is easily distinguished from that species in its cones being stalkless, and in clusters, and in the leaves being nearly double the length.

It yields excellent timber, according to Lambert.
It is quite hardy.
No. 5. Pinus consorta, Douglas, the Twisted-branched Pinc. Syn. Pinus M‘Intoshiana, Lawson. ", " Boursieri, Carmière.
Leaves in twos, but sometimes in threes on the young plants, two inches long, stout, sharp-pointed, and closely plaeed on the shoots, rounded on the outer part, and concave or chamelled
on the inner face. Sheaths very short, and composed of a few lonse, slnivelled, dark-brown seales, full of resinous matter. Branches horizontal, spreading, very much twisted, slender, and much resembling thrise of Pinus inops, or Banksiana, when ofd. Cones small, ovate-pointed, tilpering most to the apex, chastered romen the brancher, from two to two inches and a half long, and from three-quarters to one inch in diancter in the widest part, nearly straight, or very slightly curved, compact, and smonth on the surface. Seales thickened at the base, tetragenal, transversely kereled, blunt-pointed, a little depressed in the centre, and furnisheel with a small deciduous prickte in the midlle; those nearest the base being much smaller, and nearly level.

A small tree, growing mot more than fifteen or twenty feet high, with a twisted, sembly appearance, found abundantly in swampy places near the sea-codst at Cape Disappointment, and Cape Lookout, on the north-west coast of North America. It was fonmed ly the Preneln travellers, MI. Boursier and MI. Riviere, in Northem Califoma, in similar situations, at tree 30 feet hich, and one foot in diameter.

It is also quite abundant on the crest and shopes of the dry snbalpine ridges of the Siera Nevada, forming the principal part of the forest there, and extending to near the snow line. The timber is coarse and tough and of little value, as it is liable to warp.

No. C. Pinus Dexstflomd, Sirbolt, the Dense Flowered Japan Pine.
Syn. Pinus rubra, Sicbold, in part. " ". Japonica, Antoine.
Leaves in twos, needle-shaped, slender, straight, acute-pointed, and rough at the ellges; convex on the nuter part, concave on the inmer one, and somewhat glaucons on hoth faces, and from three to five inches lume. Sheaths rather short, and formed of several hroad reales, fringen or jagerel at the mals. Bads covered with imbricaterl, non-rosinoms scales. Branches rather
long, spreading, and of an ashy-gray colour. Branchlets slender and rather smooth. Cones terminal, very numerous, and either solitary or in sub-vertical clusters, on short, stout foot-stalks, more or less pendent, and about one inch and a half long, rounded at the base, and with the upper part regularly tapering into a conical point. Scales of a linear-oblong shape, slightly thickened along the upper part, rhomboid on the exposed part, closely imbrieated, small, and nearly all of an equal size; with a slender, clevated line across the middle of the lozenge-shaped termination, and a little priekle in the centre, which soon disappears. Seeds very small, with membranous wings of a rusty-brown colour, regularly striated with reddishbrown, and three times the length of the seed; seed-leaves short and mostly in sixes. It forms a tree forty feet high, with a cylindrical stem covered with a smooth bark, of an ashy-gray colour, and, according to Professor Zuccarini, is found all over Japan, but is most rarc in the southern provinces, where it is generally eultivated. In the middle part of the empire it is planted in masses, and forms vast woods, along with Pinus Massoniana, which it very mucl resembles. In the south, near Nagasaki, only a fow solitary speeimens are seen, generally forty feet or more high, while in the more northern parts it is very abundant, especially on the mountain slopes to a height of from 1000 to 2000 feet of elevation. It also oceurs at the bottom of vallers, and on the road from Ohosaka to Yeddo, where there are large thickets of it, and Pinus Massoniana, standing above the marshy riee-fields; the latter species is, however, more cspecially a valley plant, beconing a mere bush at a height of 3500 feet above the sea. The timber is of great excellence, and its resin is largely in request for the plasters and salves used by the Japanese in healing wounds and sores. In pulmonary complaints they also lold it to be a specific, and make India and China ink from the soot of both Pinus densiflora and P. Massoniana.

The Japancse eall this Fir "Mc-Matsu" (female Pinc) on account of its produeing suel an abundance of its little cones
on the adult trees, and which are smaller than those of Pinus sylvestris. They also name it "Aka-Matsu" (red Pine), on aecount of its timber being of that colour, and very similar to that of Pinus Sinensis. It is quite hardy.

No. 7. Pinus Fremonthaia, Lindlicher, Colonel Fremont's Nut Pine.

Syn. Pinus monophylla, Turvery.
" ", Llaveana, with a thin shelled seed, Mrittrery
Leaves generally in two.s, but not mfrequently in threes, or singly, from one iuch and a half to three inches in length, of a glaucous green, more or hess curved, very stout, rigid. and ending in a spiny point. Sheaths very short, and rolled backwards on the older leaves. Seed-leaves from eight to ten, hut mostly nine in number, rather long, and very stout. Branches numerous, the principal ones round the stem in of horls. Bark smooth, and of a light-hrown colour. Buds small, cylindrical, and three-quarters of am inch long. Cones of a light glossy brown colour, two inches and a half longe, and one inch and three-quarters broad, in the widest part, which is near the middle; each cone contains from six to seven rows of seales. Soales very thick, largest near the middle, bluntly pyramidal, slightly angular, and more or less recurved downwards, particutmly the smatler ones nearest the base; they are also without any points. Secels, wingless, ublong, or egg-shapect, half an inch long, bright yellow, more or less stained with dark brown, and the shells so thin, that it is very easily broken between the finger and thumb. Kernels very pleasant in flavour, and also nutritious, as it constitutes the principal subsistance of the Indians who live in the mountains, where it grows for nime months out of the twelve. It was first discovered by Colonel Fremont during his exploring expedition when eroming the Sierra Nevada, or Creat Califurnian Mountains, frowing upon both sides, and extending over the top of the great snowy chain for a distance of three hundred miles;
the tree seldom attains a height of more than twenty feet, or eight or ten inches in diameter, but is very branching, and has a peculiar but pleasant odour when bruised. It is perfectly hardy, for Colonel Fremont frequently found the thermometer at two degrees below zero at night, and four feet of snow, where it grew. The cones are produced in great abundance, and the seeds are gathered by the Indians fur their prineipal winter and spring subsistence ; either taken out and kept dry in their lhuts, or left in their matural storehouse, the cones in heaps under the trees, where they remain tolerably dry until wanted for use ; the Indians are said to live upon them alone for months and months without any other kind of food.

Dr. Torrey first gave the name of Pinus monophylla to this pine, from a supposition that the leaves were mostly solitary: but Professor Endlieher', who afterwards examined more perfect speeimens, found that the leaves were in twos and threes, and that the solitary leaves arose from Dr. Torrey's specimens being either gathered from young trees, or very stunted ones; he eonsequently altered Dr. Torrey's name of "monophylla" to that of Fremontiana, in compliment to Colonel Fremont, its first diseoverer.

It is the thim-shelled edible pine of the Californians, and is an artiele of commeree with the Indians, when in season, under the name of "Nut Pine." It is quite hardy, but a very slow growing kind.

Mr. Jeffrey found it on Mount Jefferson, in the Cascade Range, at an elevation of 6.500 foet, growing on a red sandstone soil, it tree twenty feet high, and ten inehes in diameter.

No. S. Pinus Haleppeasis, Aiton, the Aleppo, or Jerusalem Pine.

> Syn. Pinus Hierosolimitana, Du Hamel. $" \Rightarrow \quad$ Genuensis, Cook. $" \quad$ Halepensis minor, Loudon.

Leaves in twos, but not very unfrequently in threes, of a deep green, two inches and a half to three inches loug, thickly
clothing the younger branches, and very slender, but never remaining longer on the branches than two years, in conseduence of which the bramehes of old trees have a naked appearance, and the head an (ipen, thin, and straggling aspect. Buds a quarter of an inch lour, imbricated, roundish, and entirely destitute of renin. C'ones prramidal, rounded at the lase, smooth, solitary, or in paiss, from two and a half to three inches long, and one inch and a half broad, inveranly thrned downwards, with a foot-stalk three quarters of an inch long. Scales nearly flat, from one inch amel a quarter to one and a half long, and three (prarters of an moch luod, and of a deep shining brown colonr. Seds middle si\%e, with wings nearly one inch long. Seed-leaves seven in number:

A low, spreading tree, growing from twenty to thirty feet high, and ripening its cones in the autumn of the second year

It is not formel to the north of the Apernimes, but is very common to the cast and west of those monntains, as well ass in Sicily, growing huth on sands and sin racke, hat leeter on the latter ; its upper limits is $20(0)$ feet of elevation.

It is also found in the Sonth of France near Tonlon, on the island and mainland of Dalmatia, in Cireece, Syria, Spain, and Asin Minor:

This Pine is called "Peukas" ly the Greeks throughout Attica, who use its resin to preserse their wine from lecoming somr, and put the cones into the winc-barrels for a similar purpose.

Thero is the following variety :-
Pinus Halepensis Pityesis, Steven.
Syn. Piuus Pityusa, Strengreceys.

| " | tima, Lamber |
| :---: | :---: |
| " | Halepensis syriaca, Reach. |
| " | maritina, Loudon. |
| " | Alsachasica, Fibecher? |
| " | Alasica, l'umitice. |

Syn. Pinus Cairica, Don.
" $\quad$ Paroliniana, Webb.
" $\quad$ Colchica, Booth.
"

This variety differs from the species in having much longer and larger cones, stiffer and longer loaves, and in the tree being more compact, and growing to a much larger size.

It is found growing plentiful on the shores of Abshasia, (hence one of its names), around Pezundan, the ancient Pityus, and from whieh circumstance also, it received the name of Pityusa, a name given by M. Stecven, and according to whose account the tree produces leaves sometimes scarcely more than one and a half or two inches long, and very slender, while others have foliage longer and stouter than those of P. Halcpensis.

It is also found growing on the Colchis Mountains, in Syria, and on the eoast of Grecee.

> No. 9. Pinus Inols, Solander, the New Jersey Pine.
> Syn, Pinus Virginiana, Miller. variabilis, Lambert.

Leaves in twos, short, rigid, and sharp-pointed, from two to two inches and a half long, bright green, and scattered equally all over the younger branches. Sheaths short, entire, and a quarter of an inch long. Branches irregularly placed on the stem, twisted, with the more slender branchlets pendulous, and the young shoots covered with a fine, violct, glaucous bloom. Buds blunt-pointed and resinous, and the stem and larger branches produce tufts of leaves or abortive shoots. Cones oblong-conical, tapering slightly to a blunt point, and drooping, from two and three quarters to three inches long, and an inch and a quartor broad, very lard, and of a glossy, yellowish brown colour, with short, thick foot-stalks, and usually solitary. Scales clevatcd, pyramidal, four-sided, tcrminating in an awlshaped, strong, projecting prickle, pointing outwards, or slightly reflexed, and half an inch broad, and ncarly all of a size. Seeds,
wery small, with narrow wings, lather more than half an ineh long. Seed-leaves from six to eight in number.

A low tree, with a spreading top, thirty to furty feet high, with a dark-coloured bark, full of resinous matter.

It inhabits the interior of North America, and is found from New Jersey to Caroliua, where the soil is poor and sandy; it is alsn found in Maryland, Virginia, Kentucky, and Pemsylvania, but not north of the Hudson River.

Timber of little use except for fuel.
No. 10. Pintrs Laticio, Poiret, the Corsican Pine.


Leaves two in a sheath, from four to six inehes long, dark green, often twisted, and rather slemler for its class, and with short sheaths. ('ones solitary, or in paris, seldon inore than three or four inches Inng, and an inch and a half broad near the tase, conical, straight, or sometimes slightly eurved near the points. Suales convex on the back, elliptic in their general torm, scarcely augular, very slightly elevated, and of a light, yellowish-brown coluur: Buds orate, with a loug, narrow point and resinous. Seed-leaves from six to eight in number:

A lofty tree, with its branches regularly in very distant whonls, from so to $1: 30$ feet high, very common on Mount Etna, where it forms woods at ann elevation of from 4000 to 6000 feet. It also forms forest, acenrding to Professor Tenore, on the momutains of Sila, in Calahria, but it was first diseovered in Corrica, aml has since been found spread (wer the cometries of the south of Europe, in Creece, Crete, and Spain.

It forms a hatsone, open, pyramidal-shapred tree, growing very rapidly, and cominus to maturity in $7(1)$ or 80 years after planting; the wool is whitish, but brown near the centre, very
resinons, coarse, long-grained, chastic, easily worked, and durable. There are the following varieties:-

Pinus Laricio Calabrica, Delamarie, the Calabrian Pine. Syn. Pinus Calabrica, Hort.
" " stricta, IIort.

Leaves on this variety are from six to eight inehes long, thickly set on the branches; and the tree attains a large size on the mountains of Sili, in Calabria.

Pinus Laricio Caramanica, Loudon, the Caramanian Pine. Syn. Pinus Caramaniensis, Vilmorin.

$$
\begin{array}{ll}
" & \text { Heldreichii, Christ. } \\
" & " \text { Romana, Mort. } \\
" & " \text { Fenzlii, Kotschy. }
\end{array}
$$

This variety seldom grows more than half the height of the Corsiean Pine, but has a much rounder and denser head, with very dark-grcen foliage, and slenderer branches, covered with a reddish-coloured bark. Buds pointed and nearly covered with a whitish resin. The cones also are larger than those of the P. Laricio.

Pinus Laricio pygmaia, Ruuch, the Dwarf Corsican Pine. Syn. Pinus Magellensis, Schourv.
" " Laricio Montana, Hort.
" " Laricio nana, Ilort.
A very dwarf variety, from the highest region of Nount Amaro. It has its branehes lying flat on the ground, with stiff, slightly-curved leaves. Cones of a spherical form, and smaller than those of Pinus Pumilio.

Pinus Laricio contorita, Hort, the Twisted-branehed Corsican Pinc.
This differs only in having its lateral branches contorted or twisted round in different directions.

Pinus Laricio subviridis, Du Hamel, the Green-coned Corsiean Pine.
This only differs in having very pale, ycllowish-green cones.

Pisios Lumelo pixduld, C'uriare, the Pendulous Corsican Pine.
This variety has its branches and branchlets more or less peridulous.
No. 11. Piners Massinsiasi, S'mbold, not Lambert, Mr: Masson's Japan Pine.
Syn. Pinu sylvestris, Thunbery, not Limuun.
„ ", rubra. Simbelle, in part.
" ., Thunbergii, P'cillutore.
" "tabuleformis, Fortume.
Leaves in twos, needle-shanel, stifi, straight, acute-pointed, and rough at the edges; from finn to six inelies long, convex on-the conter sidn, concave on the imer one, and somewhat glmeous on both faces. Sheaths rather short, and formed of meral hroad spales, fringed of jutromel at the ends. Burls covered with imbricated, non-resinous seale - Branches rather longr, spreadins, and coverod with an ashy-gray hark. Branchhels rather smonth and stender. Cones solitary or sub-vertical, very numerous on old trees ; from two to two and a half inches Hongr, of it conical slape, rounded at the base, regularly tapering (1) the point, and on short, but somewhat rellecter finot-stalk:. scales small, woody, linear-oblong, slightly thickened on the ${ }^{14} p e r$, or exposed part, mbliquely diamond-shaped, closely imhricated, nearly all of a size, and with a slender, elevaterl line acresi the middle, laving in its centre a little prickle, which swon falls ofl. Sueds very small, with membranous winge of a rusty-brown colow, and three times the length of the seeds. Seed-leares rather short and in cixes.

Aceording Lu Professor Zuccinini and Dr. Siebold, this tree is cancly distinguished, at first sight, from Pinus densiflora, with which it is frequently found intermixed, and forming vast woods in the middle part of the island of Nippon, especially ahout Ycullo, lint it is more or less enmonon all over Japan, and China. It, however, is more a valley plant than Pims densiflam, and is frequently to be found stamling about the marshy rite-fithos, attainingro a leeight of 40 or 50 feet, but becoming
a mere shrub at an elevation of 8.500 feet, on the more exposed sides of the mountains.

The Japunese call it " Aka-natsu" (red Pine), on account of its red-coloured timber; "Kuro-matsu" (black Pinc), from its sombre appearance when old ; and "Wo-matsu" (male Pine), on account of the numerous clusters of inale aments produced on the adult trees.

The Chinese apply the term "Kok-sung" (black Pinc), on account of its dark-green appearance; and "Sjo-mats" (common Pine) from its abundance. Sicbold also mentions two varictics of it as being cultivated in the gardens of Japan, one called "Siruga-matsu" (the varicgated Pine), which is much cultivated on account of its singular appearance; the other the "Iitots-matsu" (singlc-leaved Pine), a very singularlooking varicty, only found in cultivation, with the Jeaves in each sheath so united all their length as to appear but one leaf. Timber excellent, and of a decp-red colour:

It is quite lardy:

> No. 12. Pinus Merkesir, Viecse, Merkus's Pinc. Syn. Pinus Sunati:ana, Junghut.
> " " Finlaysoniana, Wellich.

Leaves in twos, needle-shaped, wavy, ilmost smooth on the outer part, and al little angled and rough, at the edges on the inner face, from four to six inches long on the young shooti, lut more than cight inches long on the adult ones. Sheaths nearly half an inch long, composed of dark-brown, jagged seales, the outer ones soon falling off, the inmer ones being persistent. Buds long, narrow, somewhat incurved, and composed of awlshaped seales, closcly adhering at the tops, whitish at the calge:, decp-brown in the middle, and jagged on the ends. Branches silender, lower ones bent downwards, upper ones aseending at the ends, and spreading; male catkins nearly an inch long, in clusters, and blunt-pointed. Cones ovate, tapering to both ends, three incless long, and one inch and $\Omega$ half in diameter,
slightly bending downwards, and on short, slender foot-stalks. Scales projecting, pramidal, regularly recurved at the points, one inch and a quarter broad, and nearly one inch long, slightly convex at the extremitics, thickest on the summit, woody, and of a dark, glossy brown colour. Seeds small, with slowt, narrow wings half an inch long, and a quarter of an inch broad in the miditle.

A very large trec, growing $l(0)$ feet high, found on the island of Sumatra, on the mometains of Tanna-Huring and Tobah, at an elevation of from 3000 to $f 000$ feet aliore the sea. It is also found in Cochin-Chima, in Borneo, and probably in the other islands in the Indian Archipelago.
lt is quite tender:

Nu. 13. Pincs mitis, Mielictur, the Suft-lased or Vollow Pine.

L.eaves in twos, but not unfreqnently in threes, pale, yellowish green, rather spreading, from two to two and a half inches in length, rather broad, stiff, blunt-pinted, partially twisted, chamelled on the upper surface, and light, glamenus green. Sheaths hall an inch long on the young leaves, but very shore on the adult ones, ragged or torn, and partially persistent. Ditheles spreating on the luwer part of the trunk, but less divergent as they approach the liead of the tree, so as to form the summit into al recrular pyramid; the young shoots are of a vinlet glancums colour, and the buds slightly resinous. Cones surll, two antl a half inehes in Jength, and one inch broad in the middle, of a grayish hrown colour, ollong-conical, slightly tapering to the pase, and rather blunt-pminted, solitary, and with a short, stout foot-stalk. Scaley small, half an incla wide
on the larger ones, but much sinaller and more numerous near the base, slightly clevated in the centre, and terminating in an irregular, four-sided, projecting, hooked point, slightly bent backwards in some, in others straight. Seeds very small, with broadish wings, rather more than half an inch in length. Seed-leaves mostly in sixes, and rather long.

A beautiful tree, growing fifty or sixty fect high, and from fifteen to eighteen inches in diameter, for nearly two-thirds of its lengtl.

It is found in inost Pine forests from New England to Georgia, but towards the north it does not extend beyond Connecticut and Massachusetts ; is abundant in the lower parts of New Jersey, and still more so on the eastern shore of Maryland, in the lower parts of Virginia, and as far as Carolina, also in the Floridas, on the poorest lands, and on the Cumberland Mountains in East Temnesscc.

Timber close-grained, moderately resinous, excellent, and durable.

> No. 14. Pinus Mugho, Baukin, the Mugho Pinc. Syn. Pinus uncinati, Rerymond. sylvestris Mugho, Barthin. Mughus, Loudon.

Leaves two in a sheath, from one to two inches long, twisted, rather broad, stiff, not spreading, and of a dull green colour: Cones one and a lialf to two inches long, ovate and stalkless, growing two or three together, rather erect, with hooked seales, more fully developed on the outcr side, and full of resinous mattor. Branches ascending and numerous, thickly covered with foliage, and with a brownish gray bark. Wood heary, close-grained, red, and very durable, and in favourable situations a small tree thirty feet high.

It is found on the mountains extending from the Pyrenees eastward, and the Alps of South-Western and Central Europe, and has the following varieties:-

## Pines Mrigio rostrata, Antoine, the Beaked Mugho Pine.

Syn. Pinus uncinata, Widdrington.
,, ,, Montann, Bcuumuann.
" " echinata, Hoit.
" „ rubreflora, Loudon.
" " sanguinea, Luppyrouse.
This variety differs in the seales of the cones being greatly elevated, and hooked or beaked at the points, and much larger than in the original, and is the kind described by Captain WidJrington (Cook) in lis "Trusels in Spain," where he discovered it ou the Pyrenees, a small tree, thirty feet high.

Pives Meram romevdita, Link, the Round-ened Mugho Pine.
Sym. Pinus sylve.tris, rotumlata, Link:


This varety is foumd below P. Pumilio, on the Tyrol, but radily to he distinguished from it, by its upright growth, and forming a small tree with a distinct stem.

Pine's Mugho chanosa, Wimmer, the Marsla Mugho Pine. Syn. Pinus Fischeri, Booth.
" ", pyramidalis, Reuss.
". ". obliqua, Sauter:
This is the Austrian form of P. Mugho, but very much more rohnst in stature, forming a handsome pyramidal small tree.

Prices Mleno xivi, Louden, the Knee Pine.
This variety never grows more than three feet high on the Jtyrian Alps.

# No. 15. Pinus muricata, D. Don, the Bishop's Pine. 

> Syn. Pinus Eldgariana, Ifartweg.
> " " Murrayana, Balfou:.

Leaves in twos, rather thickly set on the branches, from three and a half to four inches in length on vigorous young plants, but very much shorter on old ones, very stiff, rather broad, bluntpointed, hollow on the inner side, round on the outer, and of a deep green eolour. Sheaths rather short, smooth, and not more than half an inch in length on the young leaves, and only sliglttly persistent on the older ones. Seed-leaves on the young plants in fives and rather short. Branches not very numerous, but tolerably stout and rather irregular. Buds below the middle size, imbricated, much pointed, and destitute of resinous matter. Cones in elusters, of from four to seven, in whorls round the stem, reddish brown when young, but elanging to a gray or ash colour when old ; rather pendulous, and nearly straight or very slightly incurved on the side next the branel; three inches in length, and one and a half broad near the base, which is the widest part, and tapering to rather a blunt point; the base is slightly uneven, and the cones, which are sessile, or nearly so, remain on the tree for yoars. Seales largest on the outer side of the cone, particularly those towards the base, where they are conical, nearly straight or slightly bent backwards, much clongated, pointed, and half an inch in length; the seales on the inner side of the cone and at the point are much the smallost, quadrangular, and nearly flat, except those near the point, which are rather more elevated than the others, with a slight ridge rumning across their middle, terminated by a short, straight, broad prickle in the centre ; eacll eone contains from nine to ten rows of seales, within each of which are two very small, dark-brown seeds, with wings half an inch long.

This very distinet Pine was first discovered by Dr. Coulter, at San Luis Obispo in Upper California, to the south of Monterey, at an clevation of 3000 fect , and within ten miles of the sea-shorc. It grows straight, but rather stunted, seldom exceed-
ing forty feet in height. Mr. Hartweg found it growing on the western declivity of the mountains near Monterey, and within two miles of the sea-shore, attaining a height of from twenty to thirly feot, and with a trunk twolve inches in diameter. In this locality it was confined to a small woon half a mile square, and intermixed with and surrounded hy Pinus .nsignis. Mr. Hartweg again lnet with it at a considerable distance to the south of Monterey, on the asseent to the Mission of La Purissima, where the monoteny of the bare hills was only elieved by a small forest of it; the trees, however, not attaining harger size than those found errowing near Monterey. Mr. Teftrey found it a tree forty feet high, of a conical form, on the Siskyon Alountains, at inn elevation of 7500 feet, growing in noist soil, near the summit of the momain. It was named P. Murrayana ly the Oregon Committer, and l'. Eiggariana liy Hartwerg in his Jommal. It is the "Ohispu," or Bishoplis Pine, of the Califormians, and guite hardy:

No, 16. Pint's Padisiasa, Lambert, the Timbian Pine.
Syn. Pinus Tanrica, Mort.
" ". Laricio Pallasiana, Loverdon.
Leaves in twos, very long, sharp-pointed, erect, rigidl, five or ix inches long, and channelled above; smonth, crowded, and of a shining dark green; sheaths short, half an inch long, arered with seales torn on the margins, and white when young, but dark brown when old. Buds ovate, one inch and a duarter long, and resinous, with the sides hollow. Branches seattered irregulaty along the stem, robust and chred upwards, with some uf the lower ones almost equal to the thunk in size. Cones ovate-oblung, tapering to the point, without foot-stalks, often curvel near the end, three or four inches long, and one inch and threc-epharters broad at the widest part near the base; horizontal or cinrved downwards, mostly single, or in threes round the branches, and of an ash-gray coluur: Scales rhomboid, half in inch broad, slightly clevated,
and enlarged at the base; smooth, and terminated by a slight ridge, with a very small priekle in the centre. Seeds middle size, with broad wings.

A large pyramidal tree, seventy or eighty feet high, confined to the central regions of the Crimea, forming considerable forests on the western declivity of the lofty mountains which extend along the coast of the Black Sea.

Timber very knotty, resinous, and very durable.
It is quite hardy.
No. 17. Pinus Persicis, Strangrays, the Persian Pine.
Leaves in twos, twisted, rather stiff, slarpp-pointed, and not spreading; dense, and tufted towards the end of the branches; of various lengths, from two to five inches long, deep green, channelled on the inner side, and eonrex on the outer one, with the edges rough and finely serrated, and seldom remaining longer on the tree than the second year. Branches regular, short, and rather slender, but mostly pointing upwards; the larger and older ones rather naked on the lower parts, but tufted with leaves towards the points. Buds imbricated, very thready, and free from resin. Sheaths persistent, short, onethird of an inch long, rather smooth, but shrivelled, not jaggeed at the ends, and guarded at the base with rather a broad lanceolate, recurved scale, or metanorphosed leaf, of a bright brown colour, although green at first. Cones ovate, tipering to a very blunt point, and rounded at the base, five inches long, and three inches across at the widest part; mostly in elusters round the stem, or principal top branches, but frequently solitary, and pointing downwards ; of a dull grayish brown colour, with a hard, smooth surface, short foot-stalks, and destitute of • resinous matter. Scales slightly elevated, nearly one inch broad, with the apex depressed, and hollowed in the centre. Seeds large, with broad wings one inch and a half long.

A large tree, belonging to the same section as the Aleppo Pine (P. Halepensis), introduced from the South of Persia by the Hon. W. F. Strangways.

It is perfeetly hardy.

No. 18. Pinu's Pinaster, Aiton, the Star, or Cluster Pinc.

|  | Pinus | Massouiana, Lembert, not Sielold. |
| :---: | :---: | :---: |
|  | " | Nepalensis, Royle. |
| " | " | Latteri, Madden. |
| , | " | maritima, Laincrick. |
| " | " | Japonica, Loudon. |
| , | " | Chinensis, Kıight. |
| , | " | Nova-Hollandica, Lodeliges. |
| " | , | Nova-\%ealandica, Lodelighe. |
| " | " | St. Helenica, Lovilor. |
|  |  | Syrtica, Thure. |
|  |  | negrecta, Lome. |

Leaves in twos, dark green, six to eight inches long, rigid, hroad, and very stout, slightly semated on the inargins, and thickly set on the branches in dense whorls. Sheaths threeguarters of minch long, imbricated, and pale yellow when young, but turning nearly black when old. Fuls thee-quarters of an inch long, white, woolly, imbriented, and non-resinous, with the scales turned lack at the points. Cunes from four to six inches long, aml two inches and a half wide at the broadest part, which is below the middle, and of a light shining lorown colonr, and growing in clusters of from four to eight, bit sometimes more in mumber, in a horizontal direction, and without any foot-stalks. Sicales from whe to one inch and a quarter in length, and three-quarters of an inch broad, terminating in an merpually fonr-sidel pyramid, of a gray-ash colour, wery hard, and with a small sharp point, more particularly on the upper part of the cone. Sceds oblong, with wings one inch and a half longr, and nearly half an inch broad. Seed-leaves from seven to eight in number.

A large tree, attaining a height of from fifty to seventy feet, with the banches in regular whorls, tumed up at the extremities, and thickly set with foliage at intervals of three or four inehes, oceasioned by the shedding of the mate flowers. This species and its varicties mostly grow in the sundy plains on the
lower mountains of the northern and eentral Apennines, the variety with shorter leaves and smaller cones (minor) prefers the lower mountains, while the larger coned and longer leaved form prefers the sandy plains, but neither is found south of the Apemines. Its highest limit is 2800 feet above the sea in Upper Italy. It is found in Spain, Portngal, Greece, and Turkey, also on the French coast of the Mediterranean, where it is employed for covering immense tracks of sand along the shore, and in the island of Brazza, on the Dalmatian coast in the Gulf of Venice. It is also found (but no doubt introduced from Europe) in China, Japan, New Holland, New Zealand, and St. Helena, and even in the North of India, where Major Madden and other travellers detected it in Nepal, and gave it the names of P. Nepalensis and P. Latteri, but there is not the slightest difference between the European and Asiatic plants.

It grows freely exposed to the sea breezes, and is one of our eommonest firs, but the wood is soft, and not very durable; there are the following varieties :-

Pinus Pinaster Hamilonie, 'Tenore, Lord Aberdeen's Pine.
Syn. Pinus Pinaster major, Du Humel.
" " Hamitonii, Tenore.
" $"$ Esearena, Hort. Soc.
"

Leaves of a paler green, mueh broader and shorter than those of the species. Cones shorter, and more ovate. It was first pointed out to the Earl of Aberdeen, in 182:5, by M. Risso, at Niee, where it is found sparingly on the mountains in that neighbourhood, and from whence seeds were obtained by his lordship. It is a very distinet and handsome variety.

Pinus Pindster Limoxiani, Loudon, Sir C. Lemon's Pine.

## Syn. Pinus Lemoniana, Benthum.

A curious variety, differing from the species in its proliferous habit, producing its cones at the extremity of the shoots, and consequently has a stunted appearance, and becomes short-lived on poor soils.

Pinte Pinastir mixok, Loulon, the Curtem Pinc.
Syn. Pinus maritima minor, Du Hetmel.
trocata, Krivight.
dietritis, Hout.
This differs in having shorter leaves and smaller cones, and abomeds on the west coast of Franee, also in the neighbourhomi of Corte, in Corsica, where it is called "Pin de Corte." It is the "Pin de Mars," "Pin Pinsut," and "Pin ì Trochet " of the French, and sometimes procluces its cones in larg clusters of more than one hundred in number.

This variety is distinguished by its smaller comes and tallew laabit of growth.

Pinus Pinaster vamegata, the Variegated Cluster Pine.
This only differs in laving one-third of its leaves of a pale straw colour intermised with the green ones, but sometimes the entire shoot is composed of all white, and sometimes of all green leaves.

The Pin d'Eilough of the French is also Pinus Piunster (or a slight modification of it, probably owing to climate), with the cones more or less exuding resinous tears extermally, and foumd abundantly in the great forest of Edough, near Bona, in Atreria.

## No. 19. Pinus Pinea, $I_{1 \text {, , the }}$ Italian Stone Pinc.



Leaves in twos, from five to cight inches long, straight, very robust, and of a deep shining green; those on the young plants consist of a glaucous single bract-like leaf, thickly set on the shoots, and without any sheaths, and from amongst which afterwards spring the true leaves. Sheaths when young, half an inch long, but afterwards become tom, and reduced to half their' length. Cones from five to six inches in lengtli, and nearly round or bluntly ovate, of a pale brownish glossy colour, very solid, and not coming to matmity before the third year. Scales large, from two to two inches and a half in length, and one inch and a half broad, with the thickened part pyramidal, and frequently six-sided, but mostly having but four ribs, from the four angles, which terminate in a blunt prickle. Seeds very large, three-fuarters of an inch long, with rather broad, hant very short wings. Seed-leaves from nine to ten in number:

A low tree, with a round, bushy appearance, from 15 to 20 feet high, which produces the Carpathian Balsam. It is fouml on the sandy coasts of 'Iuscany, and the States of the Chureh, to the wrest of the Apennines, on the hills of Genoa and Tuscany: frequently forming forests with the Cluster Pine (PinusPinaster), and is cultivated throughout the whole of Italy, from the foot of the Alps to Sicily, but is not commonly found higher than 1.500 feet of clevation, except in the South of Italy, where it attains an elevation of 2000 feet. It is cultivated along all the shores of the Mediterranean, and in Greece, attains a height of 50 or 60 fect, where its seeds or muts form an extensive article of commerce, as well as in Italy and the South of France.

It furms a very ormamental small tree, with a romnded head, so celebrated fir producing the fine effect in the grounds of I talian villas. There are the following varieties:-
Pinus Pinea fragilis, Du Hamel, the Thin-shelled Stone Pine.
Sym. Pinus Pinea Tarentina, Maurtti.
This variety differs in no way from the speries, ex"pte in having a very thin shell to the seeds, which is easily loroken, and for that reason cultivated in Italy, Niples, and the Sonth of Franes, where there are some very large trees to be fomed, noder the name of the "Tarentina Pine."

## 

This variety has much larger cones, and slenderer leaves, ind romes from the island of Candia or Crete' in the Mediterranom, where it attains a larger size than the common Stone Pine.

Cones of the Stone Pine are hrought from China, moder the name of the "Ronul-eoned Chinese Pine," but they in no way differ from the European form.

No. 20). Pives PGMLo, Mumk, the Mountain Pine.
Syn. Pinus Tatarici, Miller.

|  |  | Carprica, Hort. |
| :---: | :---: | :---: |
|  |  | sylventris Montana, 1 |
|  |  | Mugo humilis, M'eul. |
|  |  | Sudeticus, Ungriwde. |

Leaves in twos, curred, short, stiff, somewhat twisted, thickly set on the branches, from two th two inches and a half long, with long, lacerated, woully, white sheaths when young, but which afterwards, as they get older; become much shorter, and dark brown, or nearly black. Cones from one to one inch and a half long, and three-quarters, of an inch broad near the base, two or three growing thgether, pendulons, of a dull brown colour, and huntly uggroshaped. Scales about the size of those of the sontech Fir, but not so much elevated in the ventre. Brancher thrned upwarts, and very numerous, forming it dense bush, with the bottom branches ereeping on the ground, but growing.
in very finvourable situations, into a small tree twenty or thirty fect high, with a gray and rather smoothish bark.

This Pinc is found inhabiting the mountains of Middle Europe, generally on chalk formations, on the southern slope of the Alps, towards the cast (Tyrol), and beyond the limits of trees, but searcely higher than 7500 feet, nor lower than 4000 fect of clevation, where it prefers a swampy soil. It also grows on the northern slope of the Alps, and is very common on the C'arpathians, where it forms a region above the common Spruce Fir, and at great clevations it becomes stemless and a spreadincr bush creeping along the ground. It produces the Hungarian Balsam.

## No. 21. Pinus pungexs, Michaux, the Table Mountain Pinc.

Leaves in twos, from two to two inches and a laalf long, broad, straight, rigid, and pale, yellowish green, thiekly set on the bramehes. Sheaths short, smooth, shrivelled, and not jagged at the margins. Branches irregular and spreading. Buds blunt-pointed, and covered with resin. Concs top-shaped, rather large, light yellowish brown, three inches and at halle long, and two inches and a half broad at the base, tapering to the point, and without foot-stalks, generally in whorls round the stem and top branches, pointing lorizontally, and remaining on the tree for years. Scales thick, lard, and broad at tho base, clevated into a pyramid, with an incurved, strong, awlshaped hook, execeding a quarter of an inch in length. Seeds rather small, rough, and black, with narrow wings, noarly one inch long. Seed-leaves from six to eight in number.

A tree, with the habit of the common Scoteh Fir, but with a more branchy head, growing from 40 to 50 fect high.

It is found on Table Mountain in North Carolina, one of the highest points of the Alleghanies, nearly :300 miles from the soa, and which sunmit it covers exclusively. Pursh only found it on the Grandfather and Table Mountains, and on the Blue Hountains on the frontiers of Virginia.

Timber of little value except for fuel.

No. 2. Pinus Pyrivinca,* Lapeyiouse, in part, the Pyteueean Pine.


Leaves in twos, rarely in threes, long, rather fine, stiff, straight, and of a bright green colour, thickly set on the hranches, and six or seven inches long, channclled on the immer sides, and shan popointed. Sheaths half an inch long on the young leaves, smooth, cutire at the margins, and dark brown, but on the old ones very short, shrivelled, rough, jagged, aml nearly black. Branches stunt, of a bright orange colour, numerous, regular, spreading in all directions romd the stem, anl well furnished with laterals. Buds conical, with a long, tapering point, covered with downy seales, and full of resin. Cones two inches and a half longe one inch and a fuarter wide, anical, tapering it little to the base, on short, slender foot-stalk-, inostly solitary, and pointing horizontal. Seeds rather small, with narrow, pointed wings, three-quarters of an inch long. sicales small, half an inch wide, rounded on the outer margin, slightly clevated in the centre, with an angular line terminated in the middle with a depressed, hollow sar, but sometimes with a small prickle in the centre; those nearest the base

[^6]muels the smallest, flat, and hollow in the centre, while those near the apex are more angularly raised, and all of a paleyellow colour.

A majestic tree, growing from sixty to eighty feet high, regularly fumished with branches to the ground, and mostly growing intermixed with other kinds in the extensive forests of Spain and France.

It is found oceupying the higlest lange of the extensive forests in the South of Spain, and in a corresponding situation in the vast forestregion on the River Gabriel, in Upper Aragm, and on the Pyrenees, where it is called "Pin Nazaron." It is also found near Montpelier and the coast of the Mediterranem, in elevated positions, and attaining a great size, but not very plentiful.

This kind is easily distinguished by the loright onange coloured bark of the shoots.

> No. 23. Pinus resinosi, Solander; the Resinous or Red American Pine.

> Syn. Pinus rubsa, Michauc.
> " " Canadensis bifolia, Duhamel.

Leares in twos, five or six inches long, straight, stifl, yel-lowish-green, thickly set on the shoots, compressed, and collected in bunches at the extremities of the branches. Sheatiss nearly one inch long, white on the young leaves, but shorter, jagged, and darker with age on the older ones. Branches in whorls, rather naked, straight, open, and reddish-brown, with the larger ones on the trunk more distant than those of the Corsican Pine (P. Laricio). Buds long, pointed, and very resinous. Cones pale reddish-brown, shining, hard, ovate-conieal, rounded at the base, two inches long, one inelt and a quarter broad, and with very short foot-stalks. Scales rhomboid, largest in the middle of the cone, slightly elevated or pyramidal, with it transverse ridge, terminated by a blunt sear, unarmed in the centre, and half an inch wide, but much smaller towards the
hase, and more elevated. Seeds small, with the wings threequanters of an inch long.

A large tree, growing seventy or eighty feet high, and two feet in diameter, in dry, sandy soil, with the branehes in very distant whorls like those of the Corsican Pine.

It is found uceupying small tracts near the lake of St. John, in C'anda, and not extending farther sonth than Wilksborough, in Pemsylvania; it is very searee in all the comntry south of the Piver Hudson, but is abondant in Nova Seutia, on dry, sandy suil, and along the banks of the Cenessee, in the State of New York.
'Timber fine-grained, red, full of resin, and highly esteemed in Canadar for its strength and durability:

## Nu. थ1. Pines syluestris, $L_{\text {re, }}$ the Scotch Fir.

Syn. I'inus sylvestris vulgaris, (Insius.

| $"$ | $"$ | Generensis, Burkion. |
| :--- | :--- | :--- |
| $"$ | $"$ | Rigensis, Fiwduri. |
| $"$ | $"$ | " | Haguenensis, Loulon.

Leaves in pairs, rigid, from one inch and a half to two inches and a half in length, somewhat wared and twisted; slightly concate on the upper, and convex on the mader surface, of a light bluish-green or grayish culour; fincly serrated on the edges. Sheathe jagged and slighty ringed. Cones from two to three inches long, and from one to one inch and a quarter broad at the bise. Seales frum one to one inch and a quarter long, terminating in an irregular fonr-siled, projecting point, often reeurvel. Seeds with the wing from one to one inch and a quarter longr. Seed-leaves from five to seven in number:

A tall tree, from cin to 100 feet high, found in various parts

* The linus aylvetrio of the ancient Roman maturalists is our l'inaster, anir l'inus sylfestris being their lityida, Dy imply linus they always intended linus linea, or the Stone line.
of Europe, ripening its cones in November, or in about cighteeu months from the time of flowering, whieh is in March. It oecurs frequently in Italy, on the southern slope of the Alps, from Frioul to Nice, especially in the study soil of the valleys; it is also found in the northern Apennines. Its upper limit on the southern slope of the Alps is at 5000 or 6000 feet of elevation, while on the northern slope it is not found higher than 4000 feet, and as a general rule it eannut be said to exist lower than 2000 fect above the sca. It is found in Seandinavia, its northern limit, in lat. $70^{\circ}$, where it constitutes immense forests of fine timber; it also grows wild in Scotland, in the Sandy Plains of the North of Germany, in the mountains of Central Europe, and in the valley of the Rhine, the Tyrol, Bavaria, and towards the west it is found as far as the Pyrenees; and varieties are even found in Persia and the Caucasus, but not in North Ameriea, as stated by some writers. It is like all species of trees which have an extensive geographical range, and grow on almost every kind of soil, and at great elevations as well as in the plains; the varicties are very numerous as regards their exterior appearanec, for on poor soil and very elevated situations, fully exposed to the boisterous winds, it beeomes a diminutive shrub, while in lower and more favourable situations it beeomes a lofty timber tree, growing 100 feet high, and four feet in diameter.

The following are the prineipal varieties worth distinguishing:
Pinus sulvestris horizontalis, Don, the Highland Pine. Syn. Pinus sylvestris Montana, Hort.
rubra, Grigor: ", ", Scotiea, Willdenouv.
It is also called the Red Seotch Pine, from the colour of the wood; the Highland Pine, the Spayside Pine, and the Horizontal Scotch Fir.

This variety has its branehes clisposed in quite a horizontal direction from the stem of the tree. The leaves are broader and much more glaneous, with the bark on the trunk of the tree not so rugged. Its cones are thicker, and not so much
pointed; and the tree is more hardy when young, and grows freely in ahmost any kind of soil.
Pints sylventres morophylla, Hodyine, the One-leaved Seoteh Fir.
The leave of this variety are attached to each other throughcout their length, and have the appearance of being mited, imt ly givine them a twist they separate into two, like the ondinary Scotch Fir. It is a very singular variety.
 Fir.
This menly difters from the ordinary form, in the mixture of its pale straw-coloured with the ustal glaucous or bluish-green leaves, heing produced on hoth old and yomer wood.
 Syn. Pinus sylvestris byguma, Ifoit.
I very dwarf variety, not growing more than one on two fint hight, lut invealing widely in a horizontal direction, and having very stmed brameles and leaves.
 Syn. Pinus Fizzeromica, C'alerit.
". ". sylvestris Persica, Moit.
. " C'aueasica, Fiselici:
". "altissima, Lealetores:
Leaves much hroader, more glancous, and louger than any other variety of P. sylveitris. It is very robust, and grows lappidly to a sreat size on the mountinins near Erzeroom, in Persia, and on the C'aucasian Mountains.
 Syn. Pinns sylvestris Uralensis, Fischei.
" "Patufia, Ledebour:

A emmact, pyamidal, middle-sized tree, with mueh shorter and stiffir leaves, growing about fifty feel high on the bleak Altaitul Mountains.

Pinus sylvestris abientea, Steven, the Silvery Seoteh Fir. Syn. Pinus sylvestris lamata, Steven.
This differs from the other varieties in having its cones and leaves of a beautiful silvery lue. It is from the mountain chain east of the Black Sea, where it attains to a great size.

Section II. TERNATA, on those kinds havinc; three LeAVES IN EACII SHEATH.
No. 25. Pinus Australis, Michaux, the Southem or Swamp Pine.
Syn. Pinus palustris, Miller.
" " Amerieana palustris, Duhamel.
" " Ceorgica, Ilort.
" " Palniensis, French Gurdens.
" " Palmieri, Alanetti.

Leaves in threes, very long, colleeted in bundles at the extremities of the branches, eight or nine inches longr, with those on young plants frequently if foot long; of a brilliant green, rather stout, and reflexed, when full grown. Sheaths from one and a half to two inches long when young, but afterwards lacerated at the euds, and much shorter on the old leares. Branches few, very robust, and irregularly placed on the trunk. Buds very large, imbricated, and free from resinous matter. Cones very long, cylindrieal, tapering to a blunt point; seven or eight inches long, and two inches and a half broad, and of a rich ehestnut-brown colour. Seales from one to one inch and three-quarters broad, enlarged at the base, and elevated into at small pyramid, terminated by a small incurved prickle in the centre. Sceds rather large, oval, half an inch long, of a whitish colour, and with wings nearly one inch and a laiff long.
$\Lambda$ large tree; growing 60 or 70 feet high, and one foot and is half in dianeter for two-thirds of its length, in favourable situations.

It is found eovering vast tracts, ealled Pine-barrens, in Virginia, Georgia, and from North Carolina to Florida, near the sea-coast.

This Pine is called by the American settlers in the Southern States "the Broom Pine," and by those in tho Northern States "Red Pine," "Pitch Pine," and "Yellow Pine;" while the French and Italians call it the "Palm Pine."

Timber cxcellent, and finll of resin, and known by the name of the licorgia Pitch Pine.

There is the following variety:-

## Pintes Ausernilis licoclsa, Ioudem. Syin. Pinus palustris excelsa, Booth. <br> " lutea, Makoy.

This variety is said to have longer leaves, to grow much taller, and to come from the North-went Coast of America, and to be prifectly hardy even in Ciermany:

No. Dif. Pines Brexthamasa, Mertuery, Mr. Bentham's Pine. Syu. Pinuss Sinclairii, Hooler.
Leaves in threes, thickly set on the hranches, dark-green, and resembling thone of Pinus punderosa, but much longer, usually 11 inehes in length, very stunt, rather fat, with a slight elevated rib ruming alone their inner side. Sheaths partly persistent, and nearly an inch long on those of the young shoots, slightly shacgy, except at the extremity; where they are very ragged ar tom. Seed-leaves, on the young plants, from seven to eight in number, and rather long. Branches rather numerous. very stuut, sprealing, and rathee integular, with the bark rough. Buds large, dark brown, much imbrieated, and destitute of resinuns matter, or nearly so. Cones in chnsters of three or fime tugether, slightly pendulous, and quite straight, six inches in lemgth, and two inches and a half broad at the widest part, which is rather below the middle; the base is unequal-siderd owing to the numerons very small scales there curving to one -ikle, and forming a kind of hool round the base of the cone, which is quiter sessile, or without any fuot-stalk. Seales largest at the widest part of the cone, which is about one-third from the base, then diminishing gradually tuwards the point, which is rather blunt; those scales nearest the base are very sinall,
particularly the first four or five rows, and more elevated in the centre, which is teminated by a stout broad point; the larger seales are rather thin, and slightly elevated, or nearly that, threequarters of an inch broad, and half an inch deep, with a slightly elevated ridge across the middle of each, terminated in the centre by a very stout spine, which is quite straight; each cone has from thirteen to fifteen rows of scales. Male flowers large, cylindrical, and in large, compact clusters ; and cach seale contains within it two seeds, which are rather below the middle size, but with wings rather more than an inch in length, and half an inch in breadth.

This noble pinc, which seems to be entirely a mountain species, sometimes attains a licight of 200 feet, with a stem twenty-cight feet in circumference. Mr. Hartweg first met with it on the mountains of Santa Cruz, ia coast range rumning due north across the bay from Montercy, and distant by water about twenty-five miles, although sixty miles by land ; afterwards he found it in the Sacramento country, growing upon the ridge generally termed by emigrants from the United States, the Californian Mountains. Mr. Hartweg says, "After crossing the Chuba River, you pass the prairie, and enter the mountains near Bear Creck, where you have to pass through an interminable wood of Pinus Sabiniana, and in ascending the gradual acelivity of the mountain, you lose the region of Pinns Sabiniana, and enter that of Pinus Benthaniana, which seems to be characteristic of the upper region." Some trees of this noble pine attain an enormons size; the largest which Mr. Hartweg measured in this locality was 28 fect in circumference, and 220 feet in height. It generally grows in masses, or intermixed with a few solitary Pinus Lambertiana, which is of equal dimensions in these regions. The lofty mountains surrounding Bear Valley are well wooded by Pinus Benthamiana.

This very valuable timber tree was named by Mr. Har'tweg, in compliment to George Bentham, Esq., late Secretary to the London Horticultural Society. It is quite hardy, and the most valuable of all the tribe for timber.

No. 27. Pints brachyptera, Wislizemus, the Short Wing-
seeded Pine.
Leaves in thees, but sometimes in twos, or fours, of a dark green, and rough at the ediges; from three inches and a half to to -ix inches long, and mostly in bunches at the ends of the hanches. Sheaths persistent, and nearly hack when ohd. Buds envered with regularly aemminated, inembranaceous, fringed, persistent seales. Branehes horizontal. Cones rather erect, wate, obloner, or somewhat conial, fom two and a half to three inches long, and one inch and a half broad at the widest part. Seales thickened at the base, elevated, recurved, and sping-printed. Seeds three or four lines long, and two lines hroad. Wings shorter than the seeds.

A handsome tree, growing from eighty to a hundred feet high, ame two to three free in diameter'; found abondantly by Mrists. Wi.slenus and Engelmam, on the mountains of New Heviev, prothcing excellent timber:

No. es. Pists Bumadai, Zucturimi, the (hinese Lace-hark Pine.
Syn. Pinus exeorticata, fordun.
Leaves in threes, very stifl, convex on the back, and acutely keched on the inner face; two or three inches long, and thickly phaced ahong the young shots, frequently in bundles towards the ands of the branches, somewhat in whots, and invegularly three-edged. Sheaths composed of numerous loose seales, which won fall off, aml leave the base of the leaves maked. Buds nonre inous, and formed of several reddish-brown, smooth, fringed vales, largest at the base, and rough at the edges. Male catkins from tive tosix lines long, cylindrical, or conical; and when young placed alternately at the base of the young shoots, in elusters, but frequeutly afterwarls very distant, owing to the rapidelongation of the Joungshonts. Pranches long, very slender, little divided, glaucous, ant covered with a smooth gray bark, remdered a little rough on the stem sm alder branches by the
transverse sears, forming rhomboidal-shaped figures, which in due time are sherl, and give the stem and branehes a very peculiar appearance. Cones ovate, or slightly conical, broadest near the base, two inches and a half long, and one inch and a half in diameter, and obtuse pointed. Seales rather more than three-quarters of an inch across, four lines deep, conenve, and thin, with a slightly elevated keel or ridge, transversely placed across the seale near the upper or outer margin, and fumished in the centre with ia short, stout, reflexed point, a little sunk; the seales near the base of the eone are very small and numerous.

A middle-sized tree, found in the North of China, and much cultivated by the Chinese on the island of Chusan, and other parts of China, in pots, as the "Lace-bark Pine."

The Chinese eall this Pine "Kicu-lung mu" (the skin, or bark-shedding Pine), on aceount of its shedding its outer lark every season. Why it is called the Lace-bark Pine is not very evident.

It is quite liardy.

## No. 29. Pinus Canariensis, Smith, the Canary Island Pine.

Leaves in threes, wavy, very long, slender, and spreading ; seven inches long, of a shining grass-green, and slightly angular; frequently pendulous when full-grown, and sharppointed. Sheaths half an ineh long, torn on the margin, and mueh shorter on the old leaves. Branehes rather numerous, and regularly placed on the stem, with the branchlets rather slender and drooping ; the larger branches and trunk produce a number of short shoots, and tufts of leaves. Cones oblong, eylindrieal, five inches and a half long, and two inehes and a half wide, quite straight, without any foot-stalk, and with a hard, glossy surface. Seales one inch broad, terminating in an irregular pyramid, not much elevated, and irregularly four-sided with a blunt point. Seeds half an ineh long, with wings one inch and three-eighths long.

A large tree, growing 60 or 70 feet high, on the mountains of

Teneriffe, and on the Grand Canary Island, at an clevation of 5000 or ( 6000 feet, where it forms extensive forests, from the sea-shore to an altitude on the monntains of 6000 feet. It is most abundant at elevations of from 4000 to 6000 feet abore the level of the sea; on the Grand Cumary Island the pine forests extend from Oratava to Portillo de la Villia.

The leaves of this pine are sometimes in twos, but more frequently in threes; and the trees ascend on the slope of the Peak of Teneriffe to $7-200$ feet of elevation; but the zone above $2+(0)$ feet is wholly occupied by vast forests, mingled with the Juniperus Cecho of Webl. The inhabitants call it Teai, and eonsider its timber excellent, heing resinous, durable, and free from the ravages of insects. It is tender.

No. 30. Praes cembroides, Gordun, the Mexican Cembra-like Pine.

## Syn. Pinus fertilis, Rocel.

Lemves in threes, from one incl to one inch and a half in length on the wild specimens, but rather longer on the young growing plants; tolerably rigid, slightly twisted at the base, three-enfged, very dense, and of a bright glaucons green colon: Sheaths short, and soon falling ofl' or curling up. Seed-leaves, on the young plants, from ten to twelve in number when they first come up. Branches vertical, mostly in fives, but sometimes more numerous in a whorl, rather slender, slightly incurved, and spreading, with tolerable sinooth bark, and remarkably small buds, which are imbricated and non-resinons, of nearly so. Cones single and stalkless, from two inches and a half to three inches in length, and one inch and three-quarter:s hoad at the base, with six or seven rows of scales, and tapering lout slightly to a blunt point; the scales are romuted at the marreins, thece-quarters of an ineh broad, slightly elerated, and wetily all of a size, exeept those close to the base, which are very much smaller, and more clevaterl; each scale contains within it two wingless seeds, which are top-shapeed, slightly
angled at the smaller end, about lialf an inch in length, and rather thin shelled.

This pine resembles Pinus Llaveana in general appearance, hut differs in laving shorter, more glaucous, and smaller leaves, and with cones three or four times the size of those of P. Llaveana, with which most writers confound it ; the cones of P. cembroides lave six or seven rows of seales, while those of P . Llaveana have but three rows.

It was first diseovered in Mexico, and introduced by Hartweg, who found it in the cold distriets on the mountains of Orizaba, near the village of Chichiquilah, attaining a licight of :30 feet at an elevation of 10,000 feet above the sea. The tree is quite hardy, and the seeds are caten by the inhabitants of Orizaba.

No. 31. Pinus Chifuafuava, Wislizenues, the Chihuahua Pinc.
Leaves in threes, very rarely in fours, finely toothed along the edges, from two to three inches long, glaucous on the upper part, and light green on the under one, rery slightly striated and fringed on the edges, buds sealy, pointed, and closely inlaid. Sheaths at first long, lacerated at the edges, but soon falling off, and leaving the base of the leaves naked. Cones from one to one inch and a half long, and egg-slaped. Scales transversely oval, and without any muero.

This kind resembles Pinus inops in appearance, but is sufficiently distinct in its smooth cones. It is found common on the mountains of Chiluahua, in North Mexico, at an elevation of 7000 feet above the sea, where it forms a tree from 30 to $3: 5$ foet high.

No. 32. Pinus Coulteri, Don, Dr: Coulter's Pinc.
Syn. Pinus macocarpa, Lindelley.

| " | Sabiniana macrocarpa, Ifort. |
| :--- | :--- |
| " | Sabina Coulteri, Loudlon. |
| " | . Sibiniana major, Manetti. |

Leaves in threes, stout, and rather stiff, from 10 to 12 inches
long, and of a glaucous gray colour, ribleed on the inner side, rather flat, incurved, pointed, and enmpressect. Shenths ragged, thready, persistent, one inch and a half long on the young leave; but much slopter and torn on the old ones. Branches stout, rather distant, lint regnlarly placed in whorls on the stem, nearly horizontal, slightly elevated towards the (:xtremities, and tinged with violet on the goung shoots. Conn'; conimal-oblong, tapering to the pint, solitary, very large, 12 to 14 inches long, and six inches brome, very hamel, smonth, pale-yellow, with a polished surface, and freguently weighing from three to four pounds ach. Scales wedge-shapel, with the points thickened and drawn out inte) a strong hook; those nearest the apex shortest, inurvel, and slightly bent, while those below the middle and at the base are elongated, deflexed, and point downwards, two inches long, and one inch and a half broad in the largest omes. Seeds half an imele long, of a blackish colour, mather flattened, and much sinaller than those of P. Sabiniana, and with broad wings more than an inch long.

A large tree, with spreading branches, growing from so to 100 feet high, and three or four feet in cliancter, found on the mountains of Santa Lucia, near the Mission of San Antonia in ('alifimia, within sight of the sea, at an elevation of from 3000 to +000 fert. It is aloo plentiful in other parts of California, particularly on the " ('rusta," an aseent from Sian Luis Ol,i-po, on the brow of the momitain.

No. B3. I'Inus ('thbencls, Crifisebrech, the C'uba Pine.
Leaves in threes, but frequently in pairs, very long, rigid, compressed, and thre-sided, rongh on the edges, mueronate, or somew hat spiny-puintel, and from eight to ten inches long and nearly a lime broad. Sheaths short and persistent. Cones solitary or in pairs, ovate-comical, somewhat ohtuse at the points, pendulons, and two and a half inches long and one inch broad near the hase. Scales rhombod, smewhat pyranidally elevated and prominently kecled transwersely, with the nim-
bone or scar on the lower ones a little prominent and pointless, and the upper ones with a short straight mucro.

A moderate-sized trec, frecquently found about the Havannah, and on the castern part of the island of Cuba.

It is quite tender.
No. 34. Pinus Engelmanni, Carmiere, Engelmann's Pinc. Syn. Pinus macrophylla, Wislizenus.
Leaves in threes, but sometimes in fours, and very rarely in fives, from 13 to 15 inches long, clustered at the ends of the sloots, partially glaucous, keeled on all faces, and scrrulated on the edges. Sheaths at first long, sealy, jagged at the ends, and one inch long, but afterwards much lacerated and shorter. Cones four inches long, and one inch and a half in diameter near the base. Seales conical, with a bent spiny muero on the summit

A fine tree, common on the higher mountains of Cosihuiriachi, in North Mexico, growing 70 or 80 feet high, very much resembling the Swamp Pine of the United States, but differs in having much smaller cones, and in the leaves being three, four, and five in a slicath.

No. 35. Pinus Gerambiana, Wrallich, Captain Gerard's Pine. Syn. Pinus Neozn, Goran.
" Chilghosa, Elphienstone. " " Ancklandii, Locldiges.

Lenves in threes, stiff, threc-edged, stout, and bluntly terminating in a short point; from three to five inches long, of a bhuish-green colour, and glaucous when young. Sheaths short at first, and composed of dry; reddish-brown seales, but soons rolling up and falling off. Branches ascending, lower ones spreading. Branchlets short, rather slender, and confused. Cones ovate, oblong, or somewhat cylindrical; widest at the hase, from six to cight inches long, and from 12 to 14 inches in circumference near the lase, and of a bluish colour when young.

Sheales thick, blunt, muels recurved, and spiny at the points. Soeds nearly an inch long, cylindrieal, almost wingless, pointed at both ends, of a dark brown colour; and agreeable to cat.

A tree growing 50 feet high, with a compact head, found in great alundance, forming large forests on the northern side of the snowy range of mountains in Kunawn, beyon:l the inHuence of the periodieal rains, where it grows in very dry, rocky ground ; and aceorling to Major Madden, its mamer of growth differs from that of any of the other pines of India. Its trunk is of large girth, but searcely exceeding 50 feet in leight, firnished with numerons horizontal branches, nearly tw the ground, the upper oncs furming a large, compaet, ennical heid. It is also found to the North of Cashmere, and on the Astor Mountains in Little Thibet. The mountains near Nijoww, in the Kohistan of Cabul, are also covered with the Chilghomsit Pine. Captain Gerard states its lighest limits on the inner Himalayas to he from 10,000 to 12,000 feet of elevation. Ther exteriur bark is of in silvery gray, falling of in large flakes, ann never transforms itself into the rough outer coating like the other pines. It is called "Rhee" or "Ree" in Kumawur, "Shmogtee" by the Thibetans, aml "Sonoubar Sukkar" (owect pine mint) by the Persians and Arabs.

The Shipkees in Tribet call this pine "Kuminche" and "Sumbubur-singhar" (lesser" sweet-nut pinc), an apt name enongh, for the tree seldom grows more than 50 feet high. Mr. Winterbottom fumd it as far north as Gilgit; but nuither. Drs. Houker nor Griffith ever seem to have diseovered it in a rative state cither in Eastern Nepal or Sikkiun ; and Capt. Gerard states its highest altitude on the soutirern expusures of the inner llimalayas to be from $10,8,50$ to 12,300 feet, generally associated with Cedrus Deodora. Dr. Griflith fonnd it in Alfghanistan vecurring on the outer ranges, indicating exem tion fiom the periodieal rains. It is styled by Europeans "the edible pinc-nut;" the seeds being nemly an inch loner, very sweet, and said to possess many grod qualities, amollost

Which that of easy digestion is certainly not to be reckomed one.

The Neoza Pine also affords abundance of fine turpentine, and the cones exude a copious white resin, and produce about 100 seeds eateh, which are sold in the Simla bazatars under the name of Neoza nuts, and in those of Affighmistan as Chilghoza nuts.

It is ruite hardy, but very slow in growth.
No. 36. Pinuts Gregigi, Enyelmann, Dr. Giegeg's Mexican Pine.

Leaves in threes, short, rigid, compressed, and three-sided, somewhat rough on the margins, and from two and a half to three inches long, and half a line wide. Cones oblong, or oblong-cylindrical, obtuse at the points, pendulous, subséssile, and three inehes and three-quarters long and one and in half broad. Scales somewhat thomboid, shining, and pyratmidally depressed. Those on the outer side of the cone are pyramidadly elevated, sharply keeled transversely, blunt pointed, and much the largest. Umbone or sear somewhat depressed and mucronate. Mucro short, thick, and deflexed, but sometimes wanting.

A moderate-sized tree, from :30 to 50 feet ligh, resembling l'inus Teocote, found on the mountains of Sullillo in Mexico, by Dr. Gregg, and of which but very little is known.

> No. 37. Pinus insiginis, Dougles, the Remarkable Pine. Syn. Pinns Cahifonnica, Loisel, not Ilartuerg. " " adunca, Bosc. " „ Montereyensis, Rauch.

Leaves in threes, deep grass-green, rather slender, straight, or twisted in all direetions, very densely set on the branches, of different lengths, from four to six inches long, ribbed on the inner sides, and sharp-pointed. Sheaths very short, smooth, and rather more than a quarter of an inch long. Branches
numerous, rather irvegular, and thiekly set with shmeler lmanchlets at the extremities. Cones ovate-eonical, much printed, most developed on the exposed side, jarticularly towaths the base or outer part, three inches and a half long, and two inches and a half wide, mostly in clusters of from three to five round the stem or principal branches at the top of the tree, of a pale, yellowish-brown eolour, very hatrd, and with a smouth, glossy suffee; they point downwards, and remain for several jears on the tree. Seales radiately disided, thickest at the base, tapering into al four-silerl, Llunt pyramid, with a sunken sear in the centre, terminated by a very shon: prickle, largest on the exposed -ile, particularly towards the hase, while those tuwards the points are very small and litthe elevated. Soechs middle-sized, nearly lack, and with ample winge, more than an inch long. It takes two years to ripen the cones.

This heantiful pine is found in varions parts of Califormia growing to the lecight of from so to $l(0)$ feet, and fron two to form feet in diameter, feathered th the gromed with limelit-

It is fommel on the lighere parto of the coast range of monntains, but not more than -200 or 300 fiet ahove the lean of the sea, particularly on "Point Pinos," near Monterey where somo of the trees become one-sided, on account of the north-west winds lolowing for a great part of the year upon them.

It is a very handsome kind, and tolerably hardy:

> No. 38. Pines instambs, lindlidur, the Tinor line. Syn. Pinus Timoriensis, Loudon.

Leaves in threes, wery slender, dronping, bright green, amk from six to mine inches long. Sheatlis persistent, and one inch long. Buds staly, non-resinons, and blunt-pointed.
 seales pyramilal, amgular, small, wart-shaped, and coni"al.

A tree of which little is known, found by ('tumming in th... Philipgine Islands, and, aceording to Lambert, on the island of

Timor. It very mueh resembles Pinus longifolia, but differs in laving much slenderer and darker green leaves, and very much sinaller cones.

It is quite tender.

## No. 39. Pinus Jefrreyit, Balfour', Jeffrey's Pine.

## Syn. Pinus Jeffreyana, Vun Houtte.

Leaves in threes, pendulous at the ends, deep green, kecled on the inner face, romeded on the back, very aeute pointed, and from eight to nine inches long. Sheaths persistent, one inch and a quarter long when young, but very much shorter, lacerated at the ends, and of an ashy-gray colour when old. Buds short, stout, imbrieated, and resinous. Branches horizontal, a little deelining, rather slender, and of a light, yellowishred colour. Cones large, ovate-conical, tapering most to the point, eight inches long, and three inches and a half in dianeter at the widest part, which is towards the base, and mostly produced in elusters round the branches. Scales pyramidal, more or less projecting, one inch and a half broad in the larger ones, hut much less on those towards the base and extremity, stoutly hooked towards the points, the hook being nine-tenths of an inch long, and slightly incurved on all the scales. Seeds fourtenths oî an inch long, and dark-brown, with wings, rather more than an inch long, beautifully striated with dark-brown.

A noble tree, growing 150 feet liigh, and four feet in diameter, found by Jeffrey in the Shasta Valley in Northern California, growing in poor, sandy soil.

A very distinct pinc, and quite hardy.
No. 40. Pinus Kasiya, Royle, the Khasiya Pine.
Syn, Pinus Curendishiana, Puxton.
" " Khasyna, Hoolici:
" " Nepalensis, Pinctum Wobunense.

Leaves in threes, very slender, long, spreading, compressed, three-sided, somewhat convex on the back, seabrous on the
margins, mucronate, or somewhat spiny-pointed, bright green, and from six to eight inches long, and one-third of a line wide. Cones three or four in a whorl, broadly-ovate, or somewhat rounded, more or less pendulous when full grown, nearly sessile, and from one and three quarters to two and a half inches long, and one iuch and a half broad near the base. Seales somewhat rhomboid, more or less pyranidally elevated, and slightly keeled transiersely. Umbone either slightly clevated or depressed, and hardly mucronate. Seeds small, with short oblong wings.

A tree from 50 to 60 feet high, foum on the Khasiya hills at clevations from 2000 to 6000 fect, and on the mountains of Upper Assam in Easterm India.

It is quite tender.

No: 41 . Ponts Lawsoni, Romel, Lawson's Mexican Pine.
Leaves mostly in threes, lut sometinnes in fours, sis inche. long, rather slender, sharp-pointed, angular on the inner fices, rounded on the nuter one, and quite catire on the margins. Sheaths on the young leaves nearly an inch long, and composel of distant, sharp-pointed, lonsely imbrieaterl seales, silky at tho edges, while those on the adult leaves are much wrinkled, half an inch long, more or less firnished with distant scales, and jagged at the ends. Branchlets rather slender; very leafy, and furnished with a broad, acute-pointed seale at the lase of cach sheath of leaves, when young. Buds covered with imblricated, resinous scales. Cones from two to two and a half inches long and one inch and at half broad near the hase, conical in shape, ashy-gray in colour, and very much resembling those of Pimus syluestris in size, shape, and general appearance. Scales very small, mostly equal in size, except those at the base of the cone, which are smallest, while those on the outer or exposed part are nuth the largest, more elevated or thickened at the points, and sometimes slightly recurved; protuberances rounded on
the lower scale.s, keeled on the upper ones, and all of them terminated by a large, dark, blunt point.

A middle-sized tree, found on the higher mountans of Mexien.

> No. 42. Pinus Llateavi, Schiecte, Llave's Pine. Syn. Pinus osteosperma, Wislizcnus.
> $\Rightarrow \quad " \quad$ cembroides, Zuccarini.
> $" \quad$ edulis, Enyelmaun.

Leaves in threes, but uften in twos, short, slightly twisted, sometimes incurved, rigid, narrow, bright, glatueots green, very dense, from two to two inches and a half long, ribbed on the inner side, terminated with a shar'p point, and frequently intermixed with lanee-shaped scales (abortive leaves), particularly on the smaller shoots near the base, and which are sometimes of in glaucous white colour, like those on the Stone Pine (P. Pine) ; sheaths very shor't on the young leaves, but soon rolling up and falling off the adult ones. Branches numerous, in regular whorls, snooth, of an ash-gray colour, and horizontal, with tho points slightly elevated, and the branchlets spreading in all direetions. Buds small, blunt-pointed, numerous, and thickly covered with brown scales, reflexed at the points, and slightly resinous. Conos small, consisting of only three rows of seales, roundish, obtuse, wider tham long, one inch and threequarters wide, and one inch long, solitary, without any foolstalk, and taking two years to ripen. Seales thick, rounded at the margin, rhomboid, bluntly-pyramidal, hard, glossy, slightly angular, and more or less curved downwards, keelshaped below, three-quarters of an inch broad, deeply coneave on the inner side, and with two deep receptaceles for the seed at the base. Sceds very large, without wings, top-shaped, darkbrown, with a hard shell, and six or seven lines long, and nearly four broad, they are very agreeable to cat, but thick shelled.

A low tree, with ample spreating branches, growing from 15 to 20 feet high, and occasionally cultivated in gardens for the sake of its seeds, which the Mexieans call " Pinones."
It is found in Mexico, on the barren hills of Zimapan, Real

Hel Oro, and Real del Monte, in forests at clevations of from 3000 to 9500 feet. Timber of little use. It is tolerably hardy.

No. 43. Pinus longifolla, Rowburgh, the Long-leaved Pine. Syn. Pinus Serenagerisis, Madelen.

Leaves in threes, very slender, three-edged, of a bright, clossy green, finely serrated on the edges, and rather pendulous, or cinved backwards on the young tree, from 12 to it inches long, thickly set on the grons branches, particularly owards the ends and mpper parts of the tree. Sheaths one meh and a quarter long, and permanent. Hale flowers produced in long, close chnsters of many together at the ends of the nanches, ronnd at first, but elongratel as they open and blosson it Mareh. Cones either singly or in elusters, varying from chree to five in number, in regular whorls, tive inches long, and swo turd a half or three inches in circmuference near the base, nore or less ovate, very smooth, glossy, and hard. Sealen much hickened at the ends, and with it large, thick, hooked benk, ne inch and a quarter wide in the larger ones, bat more reurved and smaller towards the base, and finll of resinons matter. Feeds large, with rather long, narrow wings one inch and a half' long, and eaten by the hill people in India.

This species attains to a leight of from 60 to 100 feet, and is confined in a great measure to the outer or lower ranges of the mountains, commencing as low as 1000 feet above the level of the sea, and macly, if ever, attains a greater clevation than 7000 feet, but appears to have a very great power of enduring variations of climate; for it seems equally at home in the hot, damp valleys of Sikkim, as on the dry, stony hills of the Punjab, where min hardly ever falls, and it is at all seasons expused to a powerful and scorching sun. It is very common thronghont tho whole region of the Punjab, and as far to the cast as Bhotan, ocemring in all intermediate altitudes, and where, from the diversity of elimate and different ispeets in which it grows, it is known under varions names. It also abounds in all the
lower and outer ranges of the Himalayas, from Bhotan to Afighan. Dr. Griffith describes it, as descending in Bhotan to the low elevation of 1800 or 2000 feet above the sca, while on rauges between the Jumna and Sutlej, it is abundant at from 2.500 to 3000 fect of clevation, and finally it becomes stunted, and disappears at Simla, at an elevation of 7000 foct, but occurs in greatest perfection and abundance at Kamaon and Gurhwal, nortlı of the Pindur, at from 2500 to 7000 fect of elevattion, and which places seem little else than one great forest of the Cheor Pine. It has a rough bark, divided by deep fissures into large and longish plates, and the stem of the larger trecs arc about 72 fect in girth, with a clear stem 40 or 50 fect from the ground, and with an exceedingly picturesque liead, very irregular in outline, as the branches are irregularly and thinly seattered along the stem. A large quantity of tar and turpentine is extracted from the wood, and the chips are used for candles in India, and called "Chamsing" (night-lights) ; and, according to Dr. Hooker, ink is made in Sikkim from the charcoal of the burnt leaves mixed with rice-water.

It is called "Checr" by the hill people in India; a word, according to some, meaning "Bark," or "Rind," so conspicuous on old trees ; but, according to others, from its milk or turpentine, which it produces in great abundance. It is ealled "Sulla" by the mountain people from Nepal to Buschur, a term denoting "to spread fragrance," which this tree does to a remarkable extent. On the upper banks of the Jhelim river it is styled loy the people "Anunder ;" and throughout Kangram and the castom hills it is named "Checl," "Gulla," and "Thansa," or "Thanshing." There are two raricties: one, which has its woorly fibre twisted, but open in the grain, and of a white colour, and called "Kutcha" by the natives; the other, in which the fibres are straight, has reddish and compact wood, and is called "Pucka;" but this character is not pormanent, as sometimes the wood, though white, is compact and straightfibred. The reddish wood, however, is preferred by the matives, and sold under the name of "Dadar." The twisted kind, being
,ulject to warp nud split, is rejected, and never used for architecturn purposes; but the Cheel timber, fomed growing in all places at an elevation of 5000 feet and upwards, with a northem aspect and on poor soil, is invariably the straight-fibred kind, and the timber is good. Again, in sonthern localities and lower down, it is twisted in tho fibre, and but of little use for housebuilding and similar purposes. The better variety, however, is extensively used for boat-building in India; but boats built of its wood do not last more than six or seven yems, the timber boing liable to rot, if exposed to the weather; while, on the other hand, if protected, it is well alapted for house-buildims purposes, although for ship-building and spars it is almost useless, as it resists so badly the effects of the weather, and is so soft; but the quality of its timber diffies more, perhape, than that of any other pine, cons 'quent on its growing in high or low sit nittions. The forests nem Almorah, at an elevation of 4.500 foet. produce excellent timber for domentic phrpo $\cdots$, under the name of "Surnl" (straight), cither from the tall, straight, lumalhles stems of whe trees. or from the wooly fibere remline frealy aml quite straight in the grain. In the sanserit diale it is balle, "Tanshing," or "Tansi" (Needle Tiren, on account of its Jong. needle-like leaves.

Timber excellent, and full of turpentine; but the trees ar. too tender for an ordinary linglist winter; some, howerne, an hambier than others, which, no doubt, arises from the locality amb elevation where the seeds wer* grathered-certainly not from :uy specifie distinction.

No. 4t. Pints Parmyisi, Cobidon, Mr: Gambier Parry's Pine.
Lenes in thress, rather slender, narrow, and wavy, from (ight to nine inches long, rounded on the outer side, threeedged, and keeled on the inner faces, very acute-pointed, minutely serrated along the ellges, and regrolarly tapering from the base to the point; sheaths rather slort, sealy, ancl, when ald, very umch wrinkker, jarged at the enrls, and nearly hack. Branches rather long, horizontal, ami much resembling those of

Pinus Benthamiana, but slenderer. Cones in clusters round the branehes, it little declining, regularly eonical, widest near the base, and tapering to the apex, six inches long, and two inches in diameter at the widest part, sessile, with a erowd of very small scales close to the base. Scales rhomboid, numerous, glossy, hard, woody, and largest on the widest part of the cones, nearly one inch hroad, and half an inch longs, but much smaller at both extremities; slightly elevated across the middle by a transveree, acute keel or ridge, highest in the centre, and terminated by a short, straight, sharp point of a dark brown colour. Seeds below the middle size, almost round, with rather narrow linear wings, rounded and bifid at the apex, of a grayish colour, and not very membranaceous. The cones resemble those of the common Cluster Pine ( P . Pinaster), and are very different from any other known Californian Pine, they are of a bright, glossy, yellow colour, and entiroly free from resinous matter.

A large tree, resembling Pimis Benthamiana, hut with much narrower and slenderer leaves, and very different cones, found on the Sierra Nevada, in Upper California, by Lobb and Bridges.

It is quite liardy.

No. 45. Pinus Patula, Schiecde, the Spreading-leaved Mexican Pine.

|  | Pinu | subpatula, Rocel. |
| :---: | :---: | :---: |
|  |  | Escandoniana, Roe |
|  | " | Hoseriana, Roest |
|  |  | prasini, Rocr. |
|  |  | Tzompoliana, Roe |

Leaves in threes, but not unfrequently in fours and fives; very slender, soft, spreading, light. green, and recurved, from seven to nine inches long, deeply channelled on the upper side, and convex beneath. Sheaths on the young leares scaly, one inch and a half long, but very much shorter, and rather jagged
on the old ones. Branches slender, smooth, numerous, but rather inregularly placed on the stem, with the ends rather pendulous, and covered with it sinooth, grayish, lead-coloured Lark. Cones nvate, oblong, tapering to an obtuse point, four inches long, and one inch and three-ruarters broad, with it smooth prolished surface, of a pale brown colour, mostly growing in clusters of from three to five in number romd the stem and leading branches, slightly incurved, and pointing downwards. Seales slightly elevated, particularly on the exposed side, widened at the point, much depresseal, thattish, mequally four-sided, and with a small prickle in the rentre when fountr. Sects small, with rather broad wings, nearly an inch longs.

A tine graceful tree, growing from $G_{0} 0$ tr, so feet high, regnlaty furnished with spreadiner branches and drooping leaves, somewhat resembling a beantiful shining grecu fomtaili.

It is fumd plentifnlly in the colder regions of Mexieo, particularly on the Real wel Monte chain of mountains, at " Guajalute", ane the "Sumate," on the highest peaks, at elevations of from sono to 9.500 feet abowe the sea. There are the folluwing varieties :-

> Pinus patula stiacta, Bentham.
> Syn. Pinus patula erecta, Hort.

This is a more slender tree, with shorter and stiffer foliage, which does not droop, and only a litte spreading, but with romes only half the size of thme of the speeies.

It is found on the Real del Monte rapge of mountains in Mexicu, a tree from 50 to $G 0$ feet high.

## Pints bitcla macrocarpa, Schicde.

Leaves in threes, lint frequently in fives, slender, and very like those of the species. ('ones very large, from six to seven inches long, and two inches broad; glossy, pale brown in
eolour, and with the seales less elevated, but more drawn to a flattened pyramid.

It is a much larger and taller tree than the species, growing upwards of 100 feet high, but at a much lower elevation than the species.

No. 46. Pinus Pinceana, Gordon, Mr. Pince's Mexican Pine.
Leaves in threes, but frequently in twos, very slender, threcedged, straight, and rather himent-pointed; from three to four inches long, quite entire on the margins, and of a slightly glaucous green colour. Sheaths scaly, and soon falling off: Branches long, sleuder, flexible, and pendulous; branchlets slender, long, and drooping. Cones from three to three inches and a half long, and one inch and a half broad a little above the base, conical, blunt-pointed, of a glossy brown colour, and on lather stout foot-stalks. Seales irregularly shaped, somewhat four-sided, rounded on the upper margin, and largest onethird from the base of the cone; those nearest the base being rery much the smallest, more or less angular, and clevated, with the outer side kecled, and much the longest, while those along the middle of the cone are nearly flat or slightly elevated, with a sharp transverse ridge across the centre, terminated in the middle by a large oval projecting sear, a little hollow on the top, and when young furnished with a broad spine. Seeds very large, wingless, and more than half an inch long.

A recy handsome tree, growing 60 feet high, with long weoping branches like those of the Weeping Willow, and easily distinguished from all other Mexiean pines on that account.

It was first diseovered in 1844 by M. Gheisbreght, near the Hacienda del Potrees, in the Ravine of Mestitlan, on the route from Mexico to Tampico, and is No. 34 of M. Gheisbreght's specimens. It was also found by Mr. Charles Elurenberg (to whom I am indebted for my specimens, and account of the tree), upon a mountain along the road to the eity of Mexieo, at
a place ealled Cnernavaea, at an eleration of from 8000 tu 9000 feet.

No. 47. Ptius pondrros., Douglas, the Heary-wooded Pine.
Syn. Pinus Nontkatensis, Muretti.
Craiginna, Bulfout:
" ", Beardsleyi, Murray.
Leaves in threes, from eight to tell inches long, twisted, rather broad, and flexible, thickly set on the hranches, and sharp-pointed. Sheaths one inch long, smooth, hut much shorter and shrivelled on the old leaves. Branches few, in regular whorls, robust, twisted, and rather drooping; buds limntly-domed, with a prominent point, and full of resim. Cones straight, ovate, tapering to both (mels, partieularly towards the apex, three inches and a half long, and one inch and three-quarters broad; in elusters romm the hranches, on very short, stout foot-stalks, bent downwards. Scales flattencel, irregulariy four-sided, one inch broad, with a raisel centre, terminating in a conical recurved spine, slightly four-silded. Seeds middle-size, with short broad wings three-quarters of an inch long.

A tree of great size, growing uswards of 100 feet high, and four or five feet in diancter, with 30) or 40 feet of the stem free from brancles.

It is fomed abundantly thronghont the lower valleys on the North-west eoast of America, mul in Califomia, partieularly on the banks of the Flathead and Spoken Rivers, and the Kettle Falls of the Columbia, west of the Rocky Mountains, and in Rose River Valley in California, mustly growing in alluvial soils.

This pine is called "Thapa" (white wood) hy the Indians, and the "Bull Pine" and "Yellow Pine" by the settlers on the North-went corast of America and along the Cohmbia River, on aecount of its coarse-grained timber, and the yellow colomr of the heart wool.

The heart, wood of old trees scarcely floats in water, and is a most valuable timber.

## No. 48. Pinus radiata, D. Don, the Radiated Cone Pine.

Syn. Pinus insignis macrocarpa, Hartweg.
Leaves in threes, very slender, twisted, deep green, thickly set on the branches, and from three and a half to four inches in length. Sheaths short, smooth, a quarter of an inch long on the young lewres, but very much shorter on the older ones, and only partiailly persistent. Seed-leaves, on the young plants, from seven to eight in number, rather long, and slender. Branches compact, numerons, rather regular, and slender, particularly the lateral ones. Bark light brown, and rather smooth, Buds small, numerous, imbricated, and full of resinous matter. Cones mostly single, but sometimes two or three together, rather conical, very hard, slightly incurved, pendulous, and of a glossy light brown colour; six inches long, three inches and a half broad near the base, which is uncven as well as the sides, the outer side being much the longest. Seales radiant, largest at the external base and down three parts of the outer side of the cone, deeply divided, much elevated, and prolonged into a blunt-pointed nipple, half an inch in length, and three quarters of an inch broad; those seales nearest the base baing bent backwards, the others more or less convex, widest at the base, bluntly conical, slightly angular, and terminated by a blunt point; the seales on the inner side of the cone, and for four or five rows round the point, are very much smaller, quadrangular, and slightly clevated, with their points quite flat, or slightly depressed. Each conc contains from fourteen to sixteen lows of scales, within each of which are two small, nearly black seeds, with a very rough shell, and with wings one inch long, and threc-eighths of an inch broad.

This beautiful pine resembles Pinus insignis in some respects, but differs very much in foliage and cones; the leaves of $P$. insignis are much longer and stouter than those of $P$. radiata,
while the cones of P. radiata are nearly three times the size of those of P . insignis, and with the scales much more elevated. It was first diseovered by the late Dr. Coulter, in Upper Califormia, in latiturle 36 ders, near the level of the sea, and almost close to the beach, growing singly, and attiming the height of 100 feet, with a straight stem feathered to the ground with hamehes. He says it affords excellent timber, whoch is very tough, and admirally adapted for loat building, for which pur1nse it is much used at Monterey. Mr. Hartweg met with it (1n the descent towards the sea, on the momentains of San Antomio, sixty leaguen suath of Monterey, forming it small woorl, extending along the beach, where the deep grass-green of its foliage formed a great contrast with the parchet-up vergetation around it at the time.

It is hardy, and well adapted for planting near the sea-const.
No. 4.9. Pinus marda, Mille; the Stiff-leaved Pine.
Syn. Pinus Treda rigida, fiton.

| " | Fraseri, Lonldigts. |
| :--- | :--- |
| $"$ | Cimadensis trifuliat, Du Humel. |
| $"$ | " Loddigesii, Lourdon. |

Leaves in threes, from three to four inches and a hali long, stiff, sather broad, ind sharp-pointed, light green, and spreading; sheaths short, three-eighths of an inch long, and white on the young leaves, but afterwards becoming nearly black :mul shrivelled. Branches very mumerous on the upper part of the tree, and compact. Cones ovate-oblong, from two inches and a hatf to three inches and a hatf long, and one inch and a half hrond, on short, stout foot-stalls', in clusters of four or five rommd the top kranches, and remaining on the tree for years. Scales four-sided, half an inch broad, clevated into a compressed ly ramind, cemimating in an acute prickle, slightly recursed, and pointing outwards. seeds very small, with rather narvow winge, three-tharters of an inch long.

A tree growing from 70 to 80 feet ligh, in livourable situ-
ations, with a clean stem and dense top, found abundantly throughout the whole of the United States, with the exception of the maritime parts of the Atlantie distriets and the fortile regions west of the Alleghany Mountains. It is found on the plains from New England to Virginia, growing either in dry soil, or in wet, low grounds. Its most northern point is in the vicinity of Brunswick, in the district of Maine.

Timber exceedingly knotty, and full of resin, for whieh reason it is ealled in America, the "Pitch Pinc."

No. 50. Pinus Sabiniana, Douglas, Mr. Sabine's Pine.
Leaves in threes, rather slender, from 10 to 12 inches long, glaueous-gray in every stage, twisted, and, when fully grown, bent downwards, and drooping during winter, sharp-pointed, angular on the inner side, and rounded on the outer one; sheaths one inch and a half long, nearly entire at the top, with numerous rings, and wrinkled when old. Branches numerous, not very robust, covered with a violet bloom when young, and bare of leaves, except near the extremities. Cones ovate, most developed on the outer side, particularly towards the base, pointing downwards, pressing against the stem, and remaining on the tree for a series of years, from cight to ten inches long, and six inehes wide, on foot-stalks two inches and a half long, and full of resin, particularly towards the base. Scales spatula-shaped, flat on the inner side, and rounded or slightly angular on the outer one, two inches and a half long, and one inch and a lialf broad in the larger ones, but much less on the smaller ones towards the base, terminated by a strong, sharp, inenrved hook, particularly on the exposed side, and at the base, where some of the points are quite straight, and pointing upwards or towards the top of the tree. Seeds, one inch long, oblong, tapering to the base, and flattened on the inside, with a hard shell, and short, stiff wings, rather more than half an inch long; they are pleasant to eat, and nearly double the size of those of P. Coulteri. Seed-leaves from eight to ten in number.

A beantiful large tree, irregularly furnished with branehes to the ground, growing from 100 to 1.50 feet high, and from two to five feet in diameter, on the western Cordilleras of New Albion, at great clevations, also on the woody heights near Monterey, at EITToro, a ligh mountain to the east of Monterey, and in various other places in Epper Califormia, bnt never in masses or forests, but intermixed with other kinds, ripening its seeds in November.

Timber white, even-grained, but not very dumble.
It was named in compliment to the late Joseph Sabine, Esrf.
No. 31. Pents shmotina, Michetme, the lox-tail or Pond Pine.
Syn. Pinus T'ada alopecuroides, Liton. rigida serutina, Loudun.
alopecuroides, Mort.
Leaves in threes, hut sometimes in fours, from six to eight inches long, rather slender, sharp-peinted, and stiff, of a light, bright green, very dense, and ribbed on the inner side ; sheaths persistent, three-quarters of an inch long on the yomer leaves, smooth, jarged at the ends, and light-eoluured, while those on the older leaves are inuch shorter, shrivelled, and dark brown. Banches numerous, rather irregular, and of a hright yellowishbrown colour, frequently producing tufts of leaves, and bundles of suall shoots from the main stem. Cones ovate, with short foot-stalks, pointing downwards, two inches and a half loner, and nearly two inches wide, mostly in epposite pairs, and ripening in the autumn of the secomd year, but do not shed their seeds before the third or fourth year; and on which arcount it is called serotina. Scales rounded at their extremities, shightly elevated, four-sided, three-eighths of an inch broad, with the apex depressed, and terminating in a slender prickle, which soon disappears, Soeds very small, with wings three-puarters of an inch lonir.

A middle-sized tree, growing from 40 to 50 feet high, and from 1.5 to 18 inehes in diameter; on the edges of swamps and
ponds, in black, miry soil, in Pennsylvania, Carolina, and New Jerscy.

Timber of little use except for fuel.

## No. 52. Pinus Sinensis, Lambert, the Chinese Pine.

## Syn. Pinus Massoniana, Pavlatore, not Sicbold.

Leaves in threes, but frequently in twos, very slender, spreading, sharp-pointed, grass-green, five inches long, and angular on the inner sides; slieaths sinooth, half an inch long, rather entire at the ends, and of a brownish colour. Buanches rather slender, irregularly placed on the trec, and spreading ; buds bluntpointed, with numerous fine scales, and eutirely destitute of resin. Cones small, ovate, l,lunt-pointed, two inches long, and one inch and at cuarter broad, four or five in a whorl, and on very short foot-stalks. Scales rounded, flat, slightly clevated by a raised line across the middle, terminated in the econtre by a sunken sear, and with the seales much smaller towards the base. Seeds rather small, with straight wings half an inch long.

A low, branching tree, growing 30 or 40 feet high, with it drooping appearance, found on the hills all over China, and in Japan.

It is rather tender.
No. s3. Pinus Tieda, Linucus, the Torch, or Loblolly Pinc.

> Syn. Pinus Virginiana tenuifolia, Plulienett.

Leaves in threes, rather slender, and light-green, from five to five inclies and a half long, rigid, blunt-pointed, and channelled in the middle on the inner side; sheaths one inch long, nearly smooth, and whitish when young, but becoming much shorter and browner when old. Branches spreading and dense; buds pointed and very full of resin. Cones mostly in pairs, ovate-oblong, taperiug to a blunt point, three and a half to four inches long, and from one and three-quarters to two inches
broad, with little or no foot-stalk. Scales one inch and a quarter long, and threc-quarters of an inch wide, lengthened into at low pyramid, termiuated with ia sharp prickle turned inwards. Seeds sinall, with ample wings, nearly an inch in length.

A lofty tree, growing 80 feet high, with a clear stem 50 fect, and from two to three feet in diameter, with a wide-spreading head.

It is found abundantly in barren, sandy situations, from Florida to Virginia, in North Carulina, in liure forests, sometines 200 miles in extent, and in the vicinity of Charleston in Sunth Carolina

The word "tada," [roperly speaking, signifies torches in gencral, for which the timber of this species is well suiterl and much used in the Southern states of the Union, where it is called the "Frankinecuse Pine" amd "Oliffield Pine," by the inhalsitants; for when any pieec of clear land is neflected for any length of time, it is spedily covered with this kind. Hence the name of "Oldtield Pine."

## No. 54. Pinces Tencote, Schiede, the C:andle-word Pine.

| Syun |  | , |
| :---: | :---: | :---: |
| " |  | microcarpa, Reesl. |
| " |  | Mulleriana, Roezl. |
|  |  | Vilmorimiana, Roezl. |
| " |  | Galucote, Roczl. |
| " |  | Ingelii, Roesl. |
| " | " | Kegrelii, Romel. |
| " | " | interposita, Ruesl. |
|  |  | tumida, Roesl. |

Leaves in threes, firm three to five inches long, compressed, erect, rigid, sharp-pminterl, twisted at the hase, light green, chamelled min the inner side, and convex below; sheaths one inch long, persistent, jagged at the margin, but much shorter on the old leaves. Branehes rather stiff, and very lealy ; buds
imbricated, and free from resin. Cones ovate-oblong, tapering to a point, smooth, drooping, two inches and a half long, and one inch aeross, rounded at the base, and with rather a long foot-stalk. Scales half an inch across, invegularly four-sided, slightly elevated, widened at the apex, and mueh depressed, but without any spine or point in the centre. Seeds very small, with wings rather more than half an ineh long.

A tall tree, growing 100 feet high, and three or four fect in diameter, on the high lands of Mexieo, particulinly on the sloping sides of the nountains of Orizaba and Real del Monte. It is also plentiful on the mountains in the State of Oaxaca at an elevation of from 5500 to 8000 feet above the sea.

It is the "de'ocote" or "Pino de'ocote" (eandle wood) of the Mexicans.

Timber durable and full of resin.
It is tolerably hardy.

No. 55. Pinus tubeliculata, D. Don, the Tubereulated Coned Pine.

## Syn. Pinus Californiea, Martwery.

Leaves in threes, thiekly set on the branches, bright green, rather stiff, broad, and flat, with an clevated rib running along their middle on the inner side, and from four and a half to five inches in leugth; sheaths short, smooth, and not more than half an ineh long on the young leaves, but very mueli shorter on the older ones, and only partially persistent. Seed-leares on the young plants from seven to cight in number, rather slender, and not very long. Branches not vory stout, rather numerous, and invegular, with a roughish bark; buds below the middle size, imbriented, and not very resinous or pointed. Cones mostly in clusters of four, but sometimes solitary or in pairs, and only produced on the main stems; of a long, eonical shape, five inehes in length, and two broad, the outer surface curved, the inuer straight, widest near the base, and gradually tapering to the point, quite sessile, and uneven-sided at the base, very

Thard, of a light-brown colour, or silvery-gray when old, very chlossy, and full of resinous matter; they stand off at nearly right angles when old, although rather pendulons when young, and remain on the tree for years, without even opening or shedding their seeds. Scales largest and most developed at the external base, and down three parts of the onter side of the cone, deeply divided, much elevated, horizontally, and rather conical, particularly those near the base, the largest of which is three-eighths of an inch wide, terminated by a strong, sharp prickle; but as they approach towards the point of the cone, they become much less elevated, more quadrangulaw; and blunter pointed: the scales on the imner side of the cone and romed the point are very much smaller, and yuite flat, with a small, dark-hrown prickle in their centre ; each cone contains fifteen or sixteen rows of seales, within each of which are two very small seeds, with wings three-quarters of an inch in lenirth.

This pine was first discovered by Dr. Conlter, to the south of Monterey, near the level of the sea, and growing almost chose to the beach, intermixed with Pinus raliatn. Mr. Hartweg found it growing on the Santa C'rnz Mountains, sixty miles to the morth of Monterey by land. It is a tree of slow growth, and eldom attains more than 30 feet in height, with a trunk eight or ten inches in diameter. Ahr. Jeffrey fomd it at an elevation of s.000 fiet, with the ennes athering to the tree: in several instances with twenty whorlo of cones on the trme the growth of as many years, - the branches being covered with them in the silne way as the trunk.

The timber is red and hard, and the tree of a conical form, urowing about 40 teet high, in pour sandy soil.

It is quite hard!:
NEW OR DOUBTFUL KINDS, haviNG The feates three

Noing. PINt's DEflexa, Torrey, the Deflexel-sealed Pine.
Leares in threes, slember, and from six to seven iuches long,
with short sheaths. Cones oval-pointed. Scales pyramidally developed, protuberance large and recurved.

A tree of moderate size, with the stem envered with smooth hark, found by Emeroy on the high Cordilleras of California.

No. 57. Pinus Pseudo-Teda, Tenore, the False 'I'eda Pine.
Leares slender, rigid, and from four to six inches long, with fringed sheaths one-third of an inch long. Cones oval, solitary, and two inches long and one inch broad. Scales pyramidal, depressed, and with a straight or slightly curved awn one line long.

This kind, according to Professor Tenore, differs from Pinus Treda in the leaves being more slender and the eones much smaller. (Probably Pinus serotina.)

## Section III. QUINA, or those kinds maving five leaves in Each sheatil.

No. 58. Pinus Apulcevsis, Lindley, the Apulco Pine.
Syn. Pinus Acapulcensis, Don.
" " Zaeatlana, Rocsl.
" " Asteeaensis, Roczl.
Leaves in fives, slightly curved, slender, blunt-pointed, six inches long, much undulated, and of a deep glaucous green. Sheaths rather long, silky, and imbricated. Bramehes short, rather robust, irregular, few, ascending at the points, and of a glaucous violet colour on the younger parts. Cones ovatcconical, widest at the base, four inches long, and two inches and a half wide near the base ; glossy, pendulous, and growing in whorls; surface very liard, and full of resinous matter. Seales very rugged, unequally four-sided, pyramidal, straight, or sometimes prolonged into a curved beak, particularly those nearest the base; the larger ones measuring three-quarters of an inch across. Sceds rather small, with oval-shaperl wings one inch long.

A tree attaining a height of 50 feet, and inhabiting the avines in the mountains near Apulco in Mexico, where it was irst discovered by Mr. Hartwerg in 18:39. Roczl found it on he Sierrn of Zacatlan, at an clevation of 7000 feet, forming a , eautiful tree 60 feet ligh.

It is rather tender.

Yo. 59. Pines Ahistata, Engelmatin, the Awned-cone Pine.
Leaves in fives, thickly set all round the branches, threeided, abruptly-puinted, entire on the edges, bright green on moth sides, mostly with mmerons exudations of a white resin in their surfaee, and rising from the avils of ovate, acmminate, rittle, light-hrown seales, which are more persistme than the enves themselres, and cover the hranclies with their rongh, hackish remains; on young and very robunt trees the leaves re more or less curved upwards, and from one inch ame a parter to one and three-puater's long and half a line wide; lut on old and stunted trees they are scarcely an inch lones, quite traight, very spreading, and so thickly placed all round the manchlets as to give them the appearance of so many bottle mushes. The sheathis on the goung leaves are from three to our lines long, and conist of seven or eight cblong-pointed, -lpressed seales, with fringed margins, which soon lrecome preading, squarrose, and fall off in the second year; many ancolate seales also sheathe the luwer part of the young shouts, ind Engelmann states that he has seen hanches with sisteen paces, where male flowers grew, which proved that the leaves sem persistent for that immber of years. Branches spreading, ften conturted, aml covered with it smooth thin bark, full of arge vesicles, containing a clear thuid balsam, which remains eetween the layers of the old bark. The stems and larger ranches of old trees are frequently covered with young shoots, ite those of Pims Tirda, the female anents, or joung cones, mistling with their slender, lancolate, aristate, erect scales, are prohneed singly or two together near the ends of the young U :
shoots, and of a dark purple colour. Cones oval, blunt-pointed, purplish-brown, often covered with resin as if varnished, and from two inches and a quarter to two and three-quarters long and about one inch and a half broad. Seales rhomboid, half an inch long and one-third of an inch wide, with the transverse ridge rather flat; protuberance very conspicuous, with the slender muero or awn, from the small rhombic. Central muero two or three lines long, curved upwards at first, but afterwards tortuose and easily broken off. Seeds nearly three lines in length, with oborate wings six or seven lines long. Cotyledons or seed-leaves seven in number.

This very singular pine is a truly alpine species, eharacterizing the highest belts of timber on the peaks of the Colorado Mountains in California; where on sheltered slopes, at elevations between 9000 and 10,000 feet, it forms a tree from 40 to 50 feet high, with a stem from one to two feet in diameter, covered with a thin, sealy, light-grayish-brown bark, not more than three or four lines thick, even on old trees; but on the high bleak mountains of the Snowy Range, on Pike's Peak, and on the heights of the Coochetopa Pass, at an elevation of from 10,000 to 12,000 feet, it becomes a straggling birsh, frequently prostrate or almost ereeping, and thickly covered with cones. It, however, never deseends to a lower elevation than 9000 feet. The wood is white, tough, and not very resinous.

It was first introduced in 1870, by Mr. Cripps, Nurseryman, at Tunbridge Wells.

No. 60. Pinus Ayacahuite, Eiluenberg, the Ayacahuite Pine. Syn. Pinus strobiliformis, Wisliaenus.

Leaves in fives, three-edged, slender, but rather stiff, flat on the back, with a sharp projecting mid-rib and two furrows on the inner face; from three to four inches long, straight, very glaucons on both sides, and whitish when young, with a few wide serratures near the points. Sheathis short, sealy; membranacoous, and soon eurling up and falling off. Branches
rather slender, regularty in whorls, spreading, numerous, and corered with a glosisy smouth grayish bark. C'ones very long and slender, being from 10 to 12 inches in length, and three inches broad at the lase, and tapering regularly to a sharp point, which is slightly incurved towards the upper part, they are full of resinous matter, and pendent from the extremities of the top branchlets. Seales projecting at the ends, bent downwards, and recurved at the points, two inches long, dimimishing to a point at the apex; thin, wrinkled, lengthways, standing free, and of tate yellowish-brown colour: Seeds with hroad wings one inch long.

A large tree, growing 100) feet high, and three or four feet in diancter, with very muel the apprarance of the Weymouth Pine (P. Strobus), foumd in the provinees of Chiapa and ()axaca in Mexien, particularly on the higher points of the Combre Momtains in the Sierra of Oaxaca, and on the Mount Pelado or bald-mountain. It is also very common on the mountains of Quezaltonango, at an elevation of 8.00() feet, and on the neighbouring mountain of Santil Maria, where it is called "Tablas" hy the inhabitats, and "Ayacahuite" by the Hexicans. It is also found on the higher peaks of the momntains ahout Cosiquiriachi, in Northern Mexier, at an elevation of Tono or soou feet.

Timber white and soft.
It is tolerably hardy:
No. 61. Pint: Bafolmana,* Ieffirey, Dr. Balfome's Pine. Sym. Pinus Parryana, P'entutoir. quadrifolia, P'(rvy.
Lenves mostly in foms, but sometimes in threes, fours, and fives on the same shout, very dense, short, stout, glancous below, and rigid; curved inwards, blunt-pointed, quite entire, convex on the back, coneave on the inuer fate, resinous, and

[^7]from one to one ineh and it quarter long on the adult plants. Sheaths eomposed of numerous long jagged seales, whieh soon fall off, and leave the lase of the leaves naked. Branches pendulous and flexible. Bark smooth and of a reddish eolour. Cones dark brown, from four and a half to five ineles long, and rather more than an inch in diameter, tapering regularly towards the point, slightly eurved, mostly solitary, pendent on the points of the branehes, and full of resinous matter. Scales from one ineh and a half to one and three-quarters long; the larger ones six lines broad, thin, Hattened, slightly thiekened towards the points, four-sided, and concave ; smaller ones near the base, sometimes partially sumken in the centre, and terminated by a dark brown umbo or scar. Seeds middle-sized, beantifully dotted, and with ample wings one ineh long.

A fine tree, growing 80 feet high, and three feet in diameter, with an ample head; found liy Mr. Jeffrey on the mountains in Northern California, between Shasta and Seots Valley, at an clevation of from 5000 to 8000 fuet, growing on volcamie débris. Dr: Parry found it at San Diego in California.

It is quite hardy, and very distinct.
Ňu. 6‥ Pintis Buonapatea, Roeal, the Buonaparte Pine. Syn. Pimus Veitchi, Rucal.
" $\quad$ Dirrangensis, Roe⿱l.
" " hamata, Roecl.
" " Ayaenhuite Blaneo, Roezl.

Leaves in fires, but sometimes six, seven, eight, and nine are found in the same sheath; of a glaueous-green eolomr, angular on the imner face, ver'y slender, and five inehes long. Sheaths composed of long linear-pointed scales, whieh soon eurl up and fall ofi: Branehes curved, lateral ones more or less pendent, on aecount of the large cones being produced on their extremitics. Cones straight, nearly cylindrieal, 10 or 12 inches long, and three or four inches in dimeter. Seales from one ineh and three-quarters to two ineles broad, and rather more than half
in inch long on the exposed part; reflected, and strongly hooked backwards at the ends, thickest in the centre, with several elevated lines on the surface, and tapering to the point, which is much retlected, and half an inch long. Seeds large, with broad wings one inch long.

A noble tree, growing 130 feet high, with a straight trunk, furnished with long slender branches, in regular whorls, and pendent hranchlets two or three feet long, which give the tree a most perfeet and elegant appearince.

It is found growing in the department of Durango, on the -Sierm Madre, a chain of mountalins sitnated between the Table Land and Culf of Mexico, where it is known by the name of "Pino Real," or Royal Pine, a name due to its great size and majestic appearance. It is also found on the eastern side of Popocatepetl, at an elewation of from 11,000 to 12,000 feet. and like Pinus Lambertiana, it penduces a resinous substance, Which when dried and pounded leecomes a kinil of atsh-colnured ipowder, very sweet, and eaten by the inhabitants instead of sugar.

It is tolerably hardy:
Ni. G3. Pinc's Cramba, Limure, the Swiss Sitone Pine.
Syn. Pinus C'embra Helvetica, Loddiy, s.

|  | " | rulgaris, Ementichesi. |
| :---: | :---: | :---: |
|  | " | strieta, /Iorl. |
| " | " | Montana, Lameirel. |
| " | " | sativa, Amuenn. |
|  | " | cylvestris Cembra, Matthiol |
|  | , | altera, Durlenn. |
|  |  | Aphernousli, Loulon. |

Leaves in fives, from two to three inches long, sharp-pointed, three-ribbed, one of them green and shining, and the nther two white and opaque. Sheaths deciduous. Buds hroad, globose, with a long narrow point, whitish, without resin, and mostly solitary at the ends of the shoots. Cones about three inches
long, and two inches and a half broad, ovate, erect, and of a violet colour. Scales one inch broad, and the same in the widest part, slightly hooked, and not thickened at the point, but blunt; those nearest the base nuch smaller and recurved. Seeds very large, wingless, and caten in Switzerland.

An erect tree, of a bluntish pyramidal shape, regularly furnished with branches down to the ground, thickly clothed with foliage, and attaining a height of 50 fcot. Timber very soft, but very fine in the grain; fragrant and resinous.

This tree is found in the lighest regions of the Alps, from the Tyrol to Mount Cenis, between 4000 and 6500 feet of elevation. It is also found on the northern slope of the Alps, from Austria to Savoy, and Dauphine, and occurs on the C'arpathian Mountains, and on the Altai.

It is the "Aphernousli" Pine of the Tyrolese, the "Aralli" of Savoy, and the "Arth" of Northorn Italy and the Bernese Oberland mountaincers. The Russian "Kedrovoi" has probably been misapplied to this tree; as the Cedar is nowhere indigenous to Russia, and, consequently, could not have an original Sclavonic designation. The varicties are:-

Pinus Cembra monophyla, C'arrèere, the Onc-leaved Cembra Pine.

This very singular variety of the Siberian Stone Pine has much slenderer branchlets, and the leaves so compressed, or adhering togetlier along their whole length, in cach shath or set, as to appear but one laf.

It is of French origin, and very eurious.
Pinus Cemibra Sibirica, Loulon, the Siberian Stone Pine. Syn. P. Cembra Rossica, Hort.
" $\quad$ Mandschurica, Kegel.
" $\quad$ execlsa, Maximo.

Leaves in fives, much shorter, more dense and of a brighter green than those of the Swiss varicty, with the cones longer,
rut not so broad, and ia tree of much slower growth; but ac--ording to Pallas a lofty tree destitute of bramehes a coniderable way u' the trunk, and which sometimes attains a neight of 100 feet, but is never found beyond the River Lena 11 Eastern Siberia.

Seeds large, and eatable in Siberia.
Pinus Cemba pyoman, Fischer, the 1)warl' Cemhea Pine. Syn. Pinus Cembra pumila, Endllicher.

| " $\quad$ " pygmaea, Fischer. |
| :--- |
| " Combra nana, Hoit. |
| " |

A very dwarf variety, seddum growing more than two or three feet high, with a sermbly appearance, and at times asaming a ereeping form on the gromm, with the leaves very much shorter and more crowded. Cones extremely small, mealy round, and bright pmple when full grown. Scales very mall, thin, rather recurved and pointed. S'ech wingless, and wery small of their kind. It is fomnd in Eastem Siberia, covernig rocks where no other vegetation grows, and in valleyr, where it grows much stronger, but never attain the size of a mall tree. It grows on the castern slope of the Lial Mountains tuwards the Lena, where it is called the chastic Stone Pine, or Spreadiner Codar of Eastern Siberia, and has several stems, sometimes 12 feet long and three inches in diameter; erect in summer, but completely prostrated by the snow in winter. The cones are but half the size of those of the Swiss kiml, but the nuts are equally good flavoured.

Pinús Cembra Vabiegata, Mort, the Tariegated Cembra Pine.
This is a very ummental variety, with an equal portion of its leaves of a pale stran colomr.

No. 6t. Pincis corame, Romel, the Horn-shaped Coned Pine.
Leaves in fives, rather long, and slender. Cones somewhat like those of Pinus Pseudo-Strobus, long, recurved, tapering
from the base to a small point, yuite firm, and resembling a small cow's-horn. It is found on the Popocatepetl, in Mexico, at an clevatiou of from 10,000 to 11,000 fect.

It appears to be quite new, and distinet.
No. 65. Pinus Devoniana, Lindley, the Duke of Devonshire's Pinc.
Syn1, Pinus Blanco, Knight.

| " | magnifici, Roczl. |  |
| :--- | :--- | :--- |
| " | Ocampi, Roczl. |  |
| " | " | M, Devoniana, Roezl. |
| " | Thibaudiaua, Roczl. |  |
| " | " Zitacuaria, Roczl. |  |

Leaves in fives, very long, but rather slender and pendulous, of a beautiful deep shining grass-green, from cight to nine inches long, and rather sharp-pointed. Sheaths very long, rough at the end, imbrieated, and one inch long. Branches very robust, few, and very irregular; and like those of the Swarp Pine of the United States (P. palustris). Cones from nine to ten inches long, and three inches in diameter near the base, tapering to a blunt point, three-quarters of an inch wide, solitary, pendulous, curved, blunt-pointed, and not very firm or hard on the surface. Scales rather thin, one inch broad, but smaller towards both ends, rounded at the top, and irregularly four-sided, with a slightly elevated transverse line and projecting point in the centre, which is depressed and smooth. Seeds rather sinall, with the wings nearly one inch aud a half long.

A large tree, growing from 60 to 80 feet high in the mining distriets of Mexico, on the mountains of Ocotillo, between Real del Monte and Regala, and on the "Cumbra," or highest point of the mountains. It is called by the inhabitants "Pino Blaneo," or the White Pine, on account of its timber being that colour, and "Pino-rcal," or Royal Pinc, on account of its noble appearance and splendid long foliage.

Mr. Hartweg first diseovered it in Mexico in 1839.
It is tolerably hardy.

No. 66. Pints excelsa, Wallich, the Lofty Bhotan Pine.


Leaves in fives, very long, three-edded, very glancous on the inner fares, bluish-green and rounted on the outer one; from sic to cight inches long, very slender, and mostly drooping. Shenthis short at first, but som rolling up, and finally falling off. Branches in recrular whorls and sureading, thoso near the bottom reftected, while the mper oncs are more or less asecuding; hranchlets slender, longs, and spreading ; male flowers in dense clusters. Cones solitary, or sometimes two or three together round the leading shoots, of a cylindrical or sumewhat monical shape, from six to nine inches longe and two inches broad near the base, tapering towards the point, and with a funt-stalk nearly one inch loug; when young of a pea-green colour, and somewhat erect, but when fully grown completely pemdulous, and of a pale hrown colour, full of resinous matter in the shape of transparent drops. Scales thickened at the tods, but without any extended or corled points, loosely imhrinated, oval, blunt-pointed, thin, smooth, and nearly all of a ize, being one inch and a quarter long, and about one inch in hreadth. Seeds rather small, with wings one inch and a yuartrer long.

A large tree, principally found in Nepal, where it prefers the more open and cheerful aspects of the mountains. In Bhotan it forms large and beatiful woorls on the southern slopes, at an elevation of from b000 to 10,000 feet, but stunted at the last elevation. It is not found in Sikkim, but is common at Simla on warm aspects, and is found in abundance all over the interior from 6000 to 8000 fect of elcration, and as high as 11,000
fect in Kamaon, oecuring above the Deodar. In Nepal it attains an immense height, some trees being 1.50 feet high near the Shatool Pass, and below Chansun, in Kunawur, with long horizontal branches, for the most part clothed to near the ground, but inclining upwards so as to form a sprading cone, rather than a large spreading head.

It is one of the most common Pines of the central zone throughout the whole Himalayas. Dr, Griffith states its most castern limits to be Bhotim, where it is called "Limshing," and its most western locality to be on the mountains of Katiristan, near Jalalabad, where it is called "Piunce." It has not hitherto been met with in Sikkim, and appears to be wholly wanting in Central and N.W. Kamanon, but is the uppermost and only Pine met with in the aseent to the Neetee Pilss in Gurhwall, at an elevation of 11,000 feet, and on both the north and south faces of the Lamakaga Pisses; while, according to Capt, Gerard, its superior limit on the snowy range of Leem is at an elevation of 12,000 feet, and its lowest one, near Deorah, in Joobul, only 5000 feet, thus fixing the extreme limits of Pinus excelsar at from 5000 to 12,000 feet of elevation. Again, Mr. Winterbnttom traced it to the mountains of ciilgit, heyond Cashmere, its most northern habitat hitherto aseertained, as Bhotan is its most southern, and Jalalabad its most western limits.

This is the "Kail," or "Kacel" (sort of Pine), of the hill people about Simla, the "Leem," of Kunawur, and the "Yari," of Cashmere; also the Weeping Fir of the Himalayan travellers, and the Chyllit, or Cheel, of Kamaon and Curhwal.

Timber soft, white, and remarkably compact, producing in great abundance a highly fragrant resinous turpentinc.

Dr. Wallich and some other travellers inention what they consider varieties of this Pine, some with shorter, others with greener leaves, and others with stiffer foliage, but all such varietics no doubt arise from climate and clevation.

This tree flowers about the end of May, and the cones require eighteen months to mature.

No. 67. Pinus filifolia, Linelley, the Thread-leaved Pine. Syn. Pims: Skinnerii, Forbes.

| " | " | Aztecaensis, Roc:l. |
| :---: | :---: | :---: |
| " |  | bullata, Roesl. |
|  | , | Hendersoni, Rorsl. |
| " | " | Jostii, Rue=l. |
| " |  | Keteleeri, Ror=l. |
|  |  | Michoacaensis, Roc=l |
|  |  | Ocute, Roc $=$ l |
|  |  | vallida, Roesl. |
|  |  | Tan-(ieerti, Roesl. |
|  |  | Kammancis, Roesl. |

Leaves in fives, from twelve to forrteen inches long, acutely triangular, of a dnll green colour, rather stont, and curved ontward, particularly the older leaves, Sheathe long, smooth, and persistent, or not falling off Branches fesw, irregnlar, anil very robust, resembling those of the Swamp Pine of Ameriea, and densely ehothed with its heautiful long leares. Cones enngated, or comeal, tapering from the las: to a blunt point, seven or eight inches long, with a smouth and rather hard unface. Seales one inch acruse, rather equally fom-sided, depressed, and pyramidal in the centre, temmated by a hard thant point. Seeds middle sized, with the wings one inch athl a quarter lomp.

A very handsome tree, growing from forty to sixty feet high, abundant in Guatemala, particularly near Santingo, and on the" "Volcan del Fuego," in exposed places, and on the monntrins near Chatemala (City). It is also found growing on the Sierra of Zacatlan, on the road between Mexico and Tampico, at an elevation of 7000 feet; a tree sixty feet high, with a most beautiful appearance on account of its short branches, being furnishod with long, curved leaves, bending in a graceful, phme-like mamer at the ends of the shoots.

It is very tember, and modnece a light white timber of little value.

No. 68. Pinus flexilis, T'orrey, the Pliable-branehed Pine. Syn. Pinus Lambertiana brevifolia, Hooker.

$$
\begin{aligned}
& \text { " " albienulis, Engelnamn. } \\
& \text { " } " \text { Shasta, Currière. }
\end{aligned}
$$

Leaves in fives, but sometimes in twos, threes, fours, and fives, on the same braneh; short, stout, rigid, eurved, bluntpointed, quite entire, stoutly keeled on the inner face, rounded on the outer, and from two to three inches long on the adult plants. Sheaths composed of numerous, long, membrannceous, loose seales, which soon fall off and leave the bese of the leaves naked. Branches horizontal, very stout, and mueh contorted. Cones ovate, rounded at the base, two inehes and three-quarters long, and nearly two inches in diameter at the widest part, and full of resinous matter. Seales projeeting into a thickened pyramidal clevation, transversely keeled, and terminating in a short, broad, incurved sear. Sceds large, oval, and wingless.

A small tree, growing from thirty to sixty fect high in Northern Mexieo and California, the seeds of which are caten by the Indians.

It has an extensive range, being found on the mountains along the Fraser River, and on the Shasta Mountains in Northern Califormia; also on the mountains about the head waters of the Platte, Yellow Stone, Missouri, and Columbia Rivers, and on the mountains above Santa Fe in New Mexico,

Mr. Jefficy found it on the summit of a mountain near Fort Hope, on Frascr's River, and on the Shasta Mountains, growing on granite rock, where the soil is semnt. It is most abundant at an clevation of from 8000 to 9000 feet, but aseends to 14,000 feet ; at its lowest elevation, when first it makes its appearance on the mountains, it is a small tree forty fect high and one foot in diameter; with a wide spreading top, the branches being very stout, and much contorted, but dwindling down to a small shrub, on the upper part of the range not more than three feet high, of a tabular form, and so compact that a person could walk along the top of it. It is the White Pine of the Rocky Mountains.

## Pinus Gordoxiaxa. See page 30 j .

No. 70. Pint's Grenyillede, Goodon, Lady Grenville's Pine.
Leaves in fives, 14 inehes in length on the wild speeimens, very robust, three-edged, thickly set on the branches, dark green, and very much resembling those of Pinus maerophylla, but mather longer. Shenths persistent, or not falling off, nearly one inch and a hulf in length, rather rough, and sealy. Seedleaves on the young plants mostly ten in number, and rather. long. Branches mostly solitary, rarely in pais, irrecrularly placed, and very robust. Buds very large, imbricated, nonresinous, and thiekly set with long narrow brown seales. Cones pendulous, solitary, stalkless, quite straight, taperimg regularly from the base to the point, 16 inches in length, mad three inches and a half broad at the base, with from twentyeight to thirty rows of scales. Seales nearly ull of a size, sixeighths of an inch broad, and slightly elevated, and bhunt, particularly towards the base, from which a sumall portion of clear resin sometimes exudes. Seeds abont the ordinary -ize, with mostly, but not always, hificl wings, which are mather broad, and more than an inch in length.

This noble Pine is ealled "Ocote Nache," or Male Pine, hy - the inlabitants, on aceount of its robust hahis, and is fomml plentiful on the highest parts of the Cerro de San Juan, a mugre of mountains to the south-west of Tepie, ehiefly compued of ermmbled pumice-stone, of voleanic origin, and which at a distance gives the place a whitish appearance.

Mr. Hartwey found it growing on the Cerro de Sian Juan, or Saddle Momutain, near Tepie, in Mexieo, attaining a height of from (i) to 80 feet. The timber is white, soft, and not very durable.

It has been named in compliment to that excellent patron of Conifers, the late Lady Cirenville, of Dropmore.

It is tender:
No. 71. Pinus Hartwegir, Linclley, Hartweg's Pine.
Syn. Pinus Aculcensis, Roczl.
" $" \quad$ Amecaensis, Roezl.
" $\quad$ "
"

Leaves in fives, but not unfrequently in fours, very dense, six inches long, rather slender, curved, and of a dark green eolour. Sheaths long on the young leaves, but with a slnivelled appearance on the old ones, and jagged at the ends. Branches few, very robust, and irregularly placed on the stem. Cones growing in elusters, pendulous, four or five inches long, and nearly two inehes broad; oblong, tapering to the point, whiel is rather blunt, incurved, and of a deep purple colour when young, and dark-brown when fully matured. Scales flattened, broader than long, four-sided, rather thin, with a projecting or elevated short point in the centre, but much smaller towards the extremities; narrower, and more elevated ncar the apex. Seeds middle size, with very short wings, not more than threeguarters of an inch long.

A handsome tree, growing from 4) to 50 feet high, with a dense comprat head, of a fine dark green, found by Mr. Hartweg on the Campanario Mountain, in Mexico, at an elevation of 9000 feet, and beginning to appear where the Oyamel (Piceal religiosa) ceases to grow, on the monntain. It is also found on the mountains of Orizaba, and near Real del Monte, at an elevation of 10,000 feet, and 100 feet high.

The timber is excellent, and rery durable, contaning a large quantity of resinous matter, and of a reddish colour.

It is tolembly hardy:
'Nu. 199. Pinus Ginmonidia, Ifeitury, Gordon's Mexican Pine.
Leaves in fives, sixteen inches long, rather slender, threeedged, very dense, light green, and longer than any of the other kind. Sheaths persistent, or not sherdding, abont one inch and a guartor in length, rather rough, and scaly: Seed-leaves on the foung plants mostly seven in number, and rather short. Branches rather mumerous, at recular distances, slightly elevated at the points, and not very robust. Buds very scaly, uonresinous, and of a moderate size. Nale Howers rather large, oblong, in dense clusters, and very mumerous. C'ones pendulous, motly solitary, sightly curved, and tapering regnlarly from near the hase to the point, from four to five inches long, and one inch and at half broad near the base, with fourteen or fifteen rows of scales. Seales half an inch broad, slightly olesated, particularly thone about the middle and towards the point, while those next the base are nearly flat, and much smaller: The eones are quite destitute of resin, and in foutstalk.: about half an inch long. Seech small, angular, with narrow wing about one inch and a fuarter in length.

This kind forms a handsome tree from sixty to eighty feet highl, and has the longest and finest foliage of any kind yet known. It was first discovered ly Mr. Hartwerg on the Cerro de san Juan, or Saddle Mountain, near Tepie, in Mexieo, where the inhabitants call it "Ocote Hembra," or Female Pine, on account of the numerons cones which it produces.

It is very tember in Emgland.

No. 72. Pinus Koralensis, Siebold, the Corean Pine.
Syn. Pinus Strobus, Thunberg, not Linnaus.
Leaves in fives, from three to four inches long, slender, thread-shaped, glaucous, pointed, but not very acnte, flat on the back, but stoutly angled or keeled on the inner part, and three-edged. Sheaths composed of long, transparent, very entire scales, which soon fall off, and leave the base of the leaves naked and jutting out. Buds linear, oblong, and composed of eight or ten seales, of which the outer ones near the base are shortest aud obtuse ; those of the inner and uppermost ones longer, linear, loosely spreading, membranaceous, entirc, and dropping off before the leaves are fully grown. Branches spread out, horizontal, rounded and covered with a smooth, ashy-brown-coloured bark; lateral ones slender, short, and when young quite downy, and covered thiekly with bright glaucous leaves, whiel remain on the branches for three years. Cones straight, almost scssile, ovate-cylindrical, obtuse at the ends, swelling in the middle, and from four to five inches long and two broad. Scales mumerous, wedge-shaped at the base, rhomboid, reflceted on the apex, leathery, smooth, woody; wrinkled lengthways, and yellowish-brown in colour; with the edges wavy and incurved. Seeds thick, obovate, a little flattened, and somewhat angular. Shell hard, smooth, and of a grayish-brown culour. Seed-leaves from eleven to thirteen in number:

A tree growiug firom 30 to 40 feet ligh, rarely found wild in China or Japan, but much cultivated in gardens, where it rarely execeds 12 or 14 feet in height. It is found growing along the sea-const on the peninsula of Coren, and about the bay of St. Peter and St. Paul in the Island of Koraginsk, where the seeds are eaten by the people along the coast.

The Japanese call it "Wumi-matsu" (Sea-coast Pine), and the Clinese name it "Hai-sung-tse," which also means Maritime Pine.

## Nu. 73. Pincis Lanbertiafa, Doughen, Lambert's Pine.

Leaves in fives, four inches and a half long, mather stiff, of a dull, but not shining green colomr, rather rough at the edges, and slightly glancous when youngr. Sheaths very short, or nearly wanting in the old leaves. Branches in whorls, uunerous, and rather pendulous towards the extremities, and densely rlothed with foliage. Cones very large. from 12 to 16 inches long, and four inches in diameter ; deep brown, cylindrical, tapering to the point, mostly straight, and dostitute of resinous matter; pendulous when full grown, although nearly ereet when young. Sicales roundish on the uper part, rather flat, neither elevated nor projecting, and only loosely pressed on wach other, nearly une inch and a half broad in the larger ones, which are near the iniddle of the cone, but much smaller in those near the extremities; those near the base being rather open, inernved, and more pointed. Seeds large, oral, seren-eighths of an inch long, and with the wings one inch and three-guarters long, and dark-brown. They require two years to ripen, are very pleasant to taste, and are used for food by the Indians, as well as the grum-resin, which is freely produced by the tree when set on fire, as a substitute for sugrar.

A gigrantic tree, growing from 150) to 200 feet high, and from 20 to 60 feet in girth near the ground, with a straight stem 100 feet clear of branches, and an open pyramidal head.

It is foumd extending over a large tract of country; but intermixed with other firs, in the northern parts of California, aud in North-west America, at a distance of 100 miles from the sea, attaining its greatest diameter when growing in pure sand.

The Sugar Pine is found in almost unlimited numbers along the whole length of the Sierra Nevadas, of large size, and valued very highly for its timber; and excellent resin and turpentine are produced by the tree in the Butta Yerba and Nevada countics.

No. 74. Pinus meiophyla, Schicde, the Smooth-leaver Mexican Pine.

|  |  |  |
| :---: | :---: | :---: |
|  |  | Comonforti, Rocsl. |
| " | " | Decandolleana, Roeal. |
| " | " | dependens, Roezl. |
| " | " | Ehrenbergii, Endlicher. |
| " | " | gracilis, Roeal. |
| " | " | Huisquilucacusis, Roczl. |
| " | " | Lerdoi, Rocal. |
| ," | " | Monte-Allegri, Roczl. |
|  |  | verrucosia, Roesl. |

Leaves in fives, very slender, partially threc-siderl, sharppointed, smooth, and drooping, of a pale glaucous green; from four to five inches long, closely set on the euds of the branches, and frequently growing from the stem and older branches in tufts. Sheaths short, slurivelled, and almost disappearing on the older leaves. Branches numerous, slender; and pendulous towards the extremitics. Buds imbricated, and non-resinous. Cones small, ovate-pointed, two inches and a half long, and one inch and a quarter broad near the base; pendulous, flattened, or depressed at the base, and on short thick foot-stalks. Seales rather flattened, half an inch across, slightly depressed, but with a projecting slanp point in the middle, unerually four-sided, and of a dark colour: Seeds small and black, with wings nearly three-fuarters of an inch long, and rather broad.

A large tree, with an open but regular conical head, well elothed with its vertical branches and drooping foliage, attaining a height of from 60 to 100 feet.

It is found "in many parts of the colder regions of Mexico, on the mountains of Anganguco, at an clevation of 7000 feet. where it is called "Ocote Chino," from its abundance of resin, and on account of its being used for eandles. The "Ocote Chino," or Candle-wood, is also found on the mountains, in the State of Oaxaca, attaining an immense size.

It produces a valuable timber, but so hard as to resist the iplane.

It is mather tender.
Vo. 7.5. PINT's Linmatidis, Ciordun, Dr: Lindley's Pine.

Leaves in fives, very robust, and slarp-pointed, nine inehes long, threc-edged on the inmer face, and rounded on the back; of a deep green, a little glaneons when young, and very thickly f plated on the young shoots; ohler ones spreading or pendent, yonnger ones aseending Sheaths more than an ineh long on the yomer leaves, sealy, and a little wrinkled and jagged at the ends; older cones much tom, rery short, rongh, and loose. Branches very monst, curved mpards at the ends, and numerous; lateral ones stout, short, and twisted. Buds large, rather obtuse, and covered with close, light-hrown, non-resinous scales. Cones from six to seven inches long, and two inches in diameter near the hase, regularly conical, a little curved, and tapering to a recrular point. Seales numerons, small, threequarters of an inch acrons, merularly rhombid, nearly flat, or slightly tubereulated on the top, or with a slightly-elevated transwerse ridge across the centre, a little sunken in the middle, and furnished with a stout blunt prickle in the eentre, of a dark-brown colour. Seets small, with rather long narrow wings.

A superb tree, growing seventy or eighty feet high, with its branches and leaves in tufte, and very robust, forming a beautiful head, and ont of the most clegant of Mexican Pines; foumd mon Mount Ajuseo, in Mexico, at an mevation of 10,000 or $11,0(1)$ feed.

It is quite harly, nud rery listinet from Pinus Montezumee.

No. 76. Pinus lophosperma, Lindley, the Crest-seeded Pine. Syn. Pinus Torreyana, Pariy.

Leaves in fives, from cight to ten inches long, stout, stiff, and pungent at the points, with the sides rough, three-edged, and not unlike those of Pinus Coulteri. Sheaths on the young leaves upwards of an inch long, and smooth; while those on the old ones are little more than half that length, are torn at the ends, and much wrinkled along the surface. Shoots very stout, and covered, when young, with a white powder or glaucous bloom. Cones from four and a half to five and a half inches long, and rather more than three inches in diameter, somewhat globular or obtusely erg-sliaped, tapering most towards the apex, and flattened at the base, with a hard, glossy surface, and very much resembling those of the Stonc Pine (Pinus Pinea), but somewhat larger. Scales very thick at the points, rather large, elevated, glossy, hard, and distinctly twoedged, or irrcgularly four-sided; those nearest the base of the cone being very much the smallest, more rccurved, and furnished with a short, stout point, which on the larger scales is obsolete. Seeds very large, and, like those of Pinus Sabiniana, furnished with a thick crest, of at dark colom, from which proceeds a very narrow, short, oblique, membranaceous wing, which, along with the crest, separates from the seed in the form of a horse's collar.

A magnificent tree, somewhat resembling Pinus Sabiniana, with very glaucous, stout shoots, found in Lower California by Mr. William Lobb, who transmitted seeds of it to Mr. Hugh Low, of the Clapton Nursery, in the carly part of the year 1860.

It is more or less tender in England.

## No. 77. Pines Loudoniana, Gordon, Mr. Loudon's Piue.

Syn. Pims Ayacahuite macrocarpa, Hurtueg.


Leaves in fives, and like those of Pims Ayacahuite, very glancous, but much stouter, from five to six inehes long, and angular on the inner face. Sheaths composed of very long, linear, acute-pointed seales, which soun curl up and fall off. Branches in whorls, slender and horizuntal, lateral ones long, very slender, little divided aul drooping. Cones quite straight, and tapering to the point, from twelve to fourteen inches long, and from three to four inches in diameter a little above the bave. Scales from one iuch and three-quarters to two inches broad, and one inch long in the exposed part; slightly curved at the points in the upper ones, but much more so on those near the base of the enne, where they are sometimes quite retlected, and much natrower; thickest in the centre, and tapering to a broad more or less retlexed point, with several elevated lines ou the surfice. Seeds rery large, with broad ample wings, one inch long.

A noble tree, rivalling Pinus Lambertiana, and growing 140 feet high, with it straight stem, furnished with long slender liranches in regular whorls and pendent branchlets, two or three fiet long.

It is found on the cast side of Popocatepetl, in Mexieo, at an elevation of from 11,000 to 12,000 feet ; also at "Tenango," : beautiful tree, with large pendent cones at the points of the shoots, very moch resembling Pineapples, and ealled by the Mexicans, " Fina." It is alsu called "Ayacahnite colorado," or Red Ayacaluite by the inhabitant:, on aecount of its highlyesteemed timber, which is of exeellent quality.

This kind is very distinct from the Pinns Ayacahuite, of Ehrenberg, as 1 pointed out several years ago in the "Gardener's Magazine," after examining cones belonging to the late Mr. Lourlon, and collected hy Mr. Charles Ehrenberg, in Mexico.

It has been named in compliment to the late J. C. Loudon, Esq., author of the "Arboretum Britannicum," the mnst valuable book of its kind ever published.

It no doubt will be quite lardy in the West of England, coming, as it does, from so great an elcration, and a cold climate.

# No. 78. Pinus macrorhtlla, Lindley, the Long-leaved Mexican Pine. 

Syn. Pinns Carricri, Roesl.
" $\quad$ " Leroyi, Roesl.
$" \quad$ " Pawlikowskiana, Roe=l.

Leaves in fives, very stout, fourteen or fifteen inches long, deep green, and slightly reflexed when full-grown, hluntpointed and quite straight when young. Sheaths not very long, imbricated, and persistent. Branches very robust, unt numerous, but rather regularly placed round the stem, and covered with a rough, scaly bark. Cones solitary; six inches long, and three inches broad at the base, very hard, elongated, straight, and regularly tapering to the point, with a thick but short foot-stalk. Scales greatly elevated, and hooked backwards, very hard and glossy, irregularly four-sided, broader than long, and one inch wide, but much narrower and more reflexed near the base, and straight-pointed near the summit.

A tree from 100 to 130 feet high, growing in the forests of Tulancingo in Mexico, at an elevation of 8000 or 9000 fect.

Mr. Hartweg found it but sparingly on the Ocotillo Mount, onc of the lighest points of the Angangueo Mountains in Mexieo.

It is tolcrably lardy in most parts, and a most beautiful kind, on accome of its fine, ample foliage.

## 'In. 79. Pines Montezcme, Lambert, Mnitezuma's Mexiean Pine.

 Emillicheriana, Rew=l. intlexa, Ruerl.
Lowi, Rufel.
Wilsoni, Rocol.
(The Rough-barked Pine of Mexico.)
Leaves in fives, from three to four inchen in length on the wild specimens, and on young plants from four to five inches long; rather stout, rigid, three-edged, and rough at the angles, thickly set upon the yomng branches, and supported by long, harp-puinted, hrown seales at the lase of each sheath, of a lark green on the mpper anface, and - lightly glancous on the moder side, on the yomng lewses, lut on ohd, full-grown leases hark green on both simfaces. Sheaths persistent, or mot fallin? off, nearly half an inch in length, and rather routh or jagged on the ems. Seedrawes on the yomg plants from six tu dight in mumber. Bramehes fiew, very irregular, rather stont, and twisted. Bark very rough, partienlarly no the young wond, which is covered with mmerous longs, broul, harp-pointed seales. Buds few, imbrieated, non-resinous, and rather lengthened. Cones in chasters of three or four together, lant froquently single, hearly horizontal, from four to five inches in length, and one inch and three-gharters in the hroadest part, which is near the middle, tapering to both ends, and - lightly incurved, but especially towards the point, which is rather smath. Seales small, and nearly equal in size, from sixteen to eighteen rows in depth, slightly clevated, and armed with a small prickle when young. Seeds small and winged.

This Pine is very distinet, both in cones and leaves, from the West India Pine, called P. Occidentalis by Swartz, a kind found in ('inta and other West India Islands, which is quite tender, and much smaller in its conn- amb foliage, than the Mexican phat.

It is plentiful in different parts of Mexico. Hartweg found it on the mountains of Mexico, near Ajuseo, forming a tree forty feet high. It is also found on the Mountain of Orizaba, at an elevation of 11,000 feet, growing from forty to sixty feet high. Timber resinous, and considered very good.

A hardy kind, with a spreading head.

## No. 80. Pinus montricola, Douglas, the Mountain Pine. Syn. Pinus Strolus montieola, Nuttall.

Leaves in fives, short, smooth, and blunt-pointed, from three to four inches long, rather three-sided, slender, deep glaucousgreen, and with a silvery appearance when young. Sheaths short and imbriented. Cones long, slender, cylindrieal, seven inches long, and one inch and three-guarters wide, tapering to rather a blunt point, sinooth, and full of resin, generally in whorls, and on short foot-stalks. Branches rather stout, short, and densely clothed with foliage. Seales spoon-shaped, pointed, three-quarters of an inch broad at the widest part of the cone, and not closely pressed together,-the smaller ones at the base of the cone being much narrower, reflexed, pointed, and of a dark, yellowish gray. Seeds small, witl rather narrow, hatehetshaped wings, one inch and a quarter long.

A tall tree, growing $l 00$ feet or more high, and from one and a half to two feet in diameter, with very much the appearance of the Weymouth Pine, but with a more dense head, and slorter and more glaucous leaves.

It is found abundantly in Northern California, on 'Trinity Mountain, at an elevation of 7000 feet, growing on granite rock on a very poor; seanty soil, and on the higher mountains at the Grand Rapids of the Columbia, and on the rocky banks of Spoken River. Timber white, fine-grained, and tough.

There is a varicty with red-coloured eones, found on the banks of Spoken River.

It is quite hardy.

No. ©1, Pinus Ocridentatis, Surarts, the West India Pine.
Leaves in fives, bright green, from five to six inches long, rather angular, sharp-pointed, slender, but stiff, rather distant on the shonts, a little rough at the edges, and with a lanceclate, sharp-pointed seate, hatf an inch long, growing at their bave. Sheaths smonth, entire, inore than half an inch long, and persistent. (Gones rather pendulous, three inches and a half long, and one inch and a half broad at the widest part, whieh is near the base; comical, and with rather a long foot-stalk, corured with sharp-pointed seales, like those grewing at the base of the foliage. Seales swelled or thickened at their mpper extremity, half an inch broad, and angmlar, with a scar on the summit, terminated by a small, straight, but very slender peoint; the scales are nearly all of a size, except a few natr the base amb the apex. Seels rery small, with short, narrow wings.

A small tree, with the appearance of the Aleppo Pine (P. Halepensis), thin of foliage.

It is a mative of St. Domingo and ('ula, found plentiful in the quarter of Saint sinzame, in St. Domingo, growing to the height of from twenty-five th thirty feet, and is easily distingruished ly it lance-shaped seales at the base of each bmuthe of leaves on the youmger shouts.

It is temer, and distinct from the Pine called " Uecidentalis," from Mexico.

No. SO. Pints oucarpa, Schiede, the Eighreoned Pinc.
Leaves in fives, from eight to ten inches long, slender, charppuinted, rather pendulous, and slightly angular, lright-grean, and thickly set on the younger banches. Sheaths long, rather smooth, and persistent. Shoots rather slender, and pendulous at the extremities. Cones ecrog-shaped, solitary, broadest near the base, and tapering to a point, three inches and a half long, and two inches and a half hroad near the base, with a very hard, shining surfice of a prale, ghossy, yellow colour, free from resinons matter, and with rather a long foot-italk. Seales depressed, or bluntly pyranidal, theeserpariters of an inch wide, with elevated bands from the enntre to the corners, particularly
towards the apex, and irregularly four-sided. Seeds middlesizerl, with rather broad wings, one inch long. Seed-leaves se ven or cight in number:

A small tree, growing from to to is feet high, with an ample apreading head, and rather pendulous luanches, found on the volcanic mountain of Jorullo, and in other temperate parts of Mexico, in great abundance.

It is not hardy in England, and las the following variety: -

## Pinus oociarombis, Benthem. Syn. Pinus Skinnerii, Hort.

This is the Guatemala form of Pinus oocarpa, and only differs from it in having smaller and more pyramidal cones, and slenderer leaves than the Mexiean plant. It is found plentiful in the pine tracts in various prarts of Cuatemali, particularly on the low rauges of "Choacus," in the province of Vera Paz, at an clevation of about 4000 feet; and although it descends nearly to the shores of the Bay of Honduras, it never oceurs on the south coast, or at a higher clevation than 5000 feet above the level of the set.

It is a beatiful tree, 50 or (60) feet high, but yuite tender in England.

No. 83. Pinus Orizabee, Goidon, the Orizala Pine.
Syur. Pinus Antoincana, Roesl.
Leaves in fives, from eight to mine inches in length on the wild specimens, and rather longer on the young plants in cultivation, very slender, sharp-pointed, three-edged, thickly set ou the branches, very rough at the edges, of a light but bright green colour, and much resembling those of Pinus PseudoStrobus. Sheaths persistent, or not falling off, about lialf an inch in length, rather smooth, and entire. Seed-leares on the young plants frou seven to cight in mumber. Branches numerous, spreading, rather irregular, slightly ineured, and slender. Bark rough. Buls large, light brown, mueh imbrieated, and destitute of resimous matter: Cones in clusters of four or five,
and pendulua-, from four to tive inches long, and two inches and a half broar! at the base, straight, and tapering to a point, rith a foot-stalk nearly one inch in length, and with fious rwelve to sisteen rows of seales in each, which are much slevated, slightly hooked, and nearly all of a size, but rather smaller towards the extremities, and measure ahout half an inch across. Each scale contains two very small seeds, with wings nearly an inch in length.

It was first discoverel by Hartweg on the eastern dectivity of the Momatain of Orizaba, in Mexico, at the same elevation : 10,000 feet) as P. cembroides, rrowing in company with that species and a bushy Juniper; forming a small tree about 30 Tree hiehl, witl a rery graceful foliage and habit, hut not abnudant. It ripens its seeds in Novomber, and is not quite hamely, eas a wery severe winter in England kills it.

## No. St. Pincs purcifluba, Mielold, the Small (male) Flowered

 Japan Pine.
## Syn. Pinus ('emha, Thunleris, not limuan*.

Leaves in fives, very elancous on buth faces. stiff, pointed, slender, and montly lrent on twisted, consed, or that on the hack, with the immor fice stuntly keeled, three-erlgent, ifentienlatend in the haek of the keed, and varying in lengeth on the anme shout; from three-guarters of an inch tor two incie: in length, and remaning on the lamelnes for thene year Sheaths compmed of long membranaceons seales, which soon fall oft and lease the base of the leaves naked, jutting out, and mot olecurrent. Male catkins very small, met more than theen of fund lines long, ennical, or ergg-haperd, and in chasters round He erach of the previous shouts. Branches spreading, horizontal, bender, and covered with smonth ashy-gray bark; lateral nnes thickly corered with short, stiff, curved, glaucous leaves. Cones oval ore clliptice, hlust at the cmids, two inclese and a gharter longe and emmeneed of alont tweuty seales. Somen weelge-shaped, large, somewhat orbicular at. the base, amd rounded abrove, leathery, or almost. woody, concave, and of a
grayish brown colour, each scale covering two large wingless seeds at its base. Seeds oval, or elliptic, obtuse at both ends, and resembling those of the Siberian Stone Pine, but much larger, with a hard, bony, smooth shell, of a yellowisl-brown colour. Seed-leaves from eight to ten in number.

A small tree, growing from 20 to 25 fect high, in the northern parts of Japau, on the Island of "Kuriles," on high mountains, and on the hill sides of Fakonc. It is also found cultivated in the Japanese grardens, where they call it "Goyono Matsu" (Pinus pentaphylla), and distinguish different varieties, some on account of their simall dimensions ("Fime-gajo-Matsu," the 1) warf Pine, with five leaves), and others on account of their longer leaves and less sturnted appearance.

It is quite hardy.

> No. 8.5. Pinus Pliuck, Griesbeck, the Rumeliau Pine. Syn. Pinus Cembra futiensa, Griesbecti.

Leaves in fives, rather ereet, three-edged, bright green, with slight glaucous bands on the upper surface, very narrow, stiff, and acute-pointed, with the upper sitle channelled, the under one sharply keeled, the margins rough, and from three and a half to four inches long. Sheaths on the young leaves five or six lines long, and composed of oblong-linear sharp-pointed seates, which soon fall off and leave the base of the leaves naked. Branches spreading, and thickly furnished with short, slender, smooth laterals, thickly covered with leaves towards the ends, and naked on the lower parts. Cones in the adult state eylindrieal, sliglitly tapering to the point, obtuse at both ends, nearly. sessile, yellowish-brown, and from three to four inches long, and ratlier more than an inch in diameter, and fumished with seven or eight rows of seales. Scales an inch broad and three-fourths of an inch long, eartilaginous in the iniddle, thin on the edges, broadly rounded, furrowed, and wrinkled at the base and apex; loose, smooth, and shining on the back, with nearly one-third of their surface covered; umbo, or sear, smooth, and trans-
versely fanceolate. Seeds ovate-oblong, obtuse at both ends, three lines long and two lines broad, and covered with a hard, brittle, bony shell of a yellowish-gray colour, and furnished with ample wings.

It is a native of the mountains of Macedonia and Rumelia, in European Turkey, at an elevation of from 5000 to 8000 feet, amb in favourable situations forms an erect tree from 30 to t) fect high but in high and exposed situations it becomes a how. spreading bnsh, not inore than four feet high.

This kind bears a considerable resemblance to the Californian Pinus inunticula.
'No. 86. Pintis protuberans, Rural, the Protuberant scaled Mexican Pine.
Syn, Pinus tudis, Roesl, not Endlicher: all rulata, Ror $=$ l. Oecidentalis, Huit, not Ilumbuldt or Sucertz. exserta, Row=l. heteromorpha, $R$ ra $=1$.
Leaves in fives, rery slender, curved, and 10 inches long. shenthe nearly one inch long. Cones beautifully cursed towards the point, in chasters of three or four torethere, and sharppointed, six inches long, and from two to two inches and a half indiameter. Seates irregrular shaped, more than one inch hroad, and half :an inch long. rounded at the top, and simoth; fir)tuherance very clevated, with different faces or centres set traight.

A tree upwards of 100 feet high, with its branches a little raised or elevated at the ends, and curverl leaves; a very handsome kind, fomed at an elevated place on the Contreras, in Mexico, at from 9000 to 10, roon feet of elevation. Rueal foumd it growing from 70 to $7 .$. feet ligh, with very slender hranches, and curved lear est, upon low hills on Mount Tzompoli, in Mexico, at an elevation of 9000 feet.

A fine hardy kind, somewhat resembling Pinus Montezunae in foliagre and gencral appearance, but with very much smaller rones, having very angular, glossy seales, much clevated towarls their points, and quite hard.

No. 57. Pinus Psifudu-Strobus, Lindley, the False Strobus Pine.

|  | Pinus | Tenangaensis, Roczl. Bonthiana, Roczl. |
| :---: | :---: | :---: |
| , |  | coaretata, Roezl. |
| " |  | elegans, Roesl. |
| " |  | grandis, Roezl. |
| " |  | Hiageana, Roezl. |
| " |  | monstrosi, Roest. |
| " |  | Nesselrodiana, Roeal. |
| " |  | Northumberlandiana, Roea |
|  |  | Paxtoni, Rorzl. |
| " |  | Rumeliana, Roezl. |
| " |  | Sin-Rafaeliana, Roeal. |
|  |  | Soulangeana, Rorel. |
|  |  | spinosa, Roezl. |
|  |  | Thelemami, Roc=l. |
|  |  | Tomacocatensis, Roeal. |
|  |  | Yam-Houttci, Roezl. |

Leaves in fives, very slender, eight or ten inches long, of a hhuish-gray or graucous colour, rather pendulous when full grown, and slighty angular. Sheaths one inch long, composed of imbrieated scales, and jagrged at the ends. Branches diverging at right angles from the main stem, as in the Weymonth Pine (P. Strobus), with mumerous slender hranchlets. Cones from five to six inches long, and one inch and three-cuarters hroad, of a conical shape, slightly enrved, aud growing in whorls romud the branches in a horizontal or slightly declining direetion. Scales rhomboid, a little rounded towards the top; rising in the eentre, depressed at the base, slightly kecled transversely across the middle, and terniuated by a slarp point in the centre, and three-quarters of an inch broad, and rather more thau half an inch long. Seeds middle-sized, with dark marbled wings one inch long.

A magnificent trec, from 90 to 100 feet high, with a very straight stem and horizontal branches, a little elcrated towards the points, and furnished with great tults of foliage at the endis of the shoots.

It is found in Mexico on the highest mountains, particularly in the State of Angangueo, at Real del Monte, and on the mountains between the two volcanoes of Popocatepetl and Ixtacihuatl ; its chict range being from S000 to 10,000 feet of eleration.

A most beautiful tree, on account of its finc long leaves, being in tufts or bundles at the ends of the shoots, and the branches being very regularly placed along the stem.

It is tender:

## No. 88. Prites Regelinya, Rue=7, Professor Regel's Pine.

Leaves in fives, slender, and from 10 to 11 inches long. Sheaths from three-quarters of an inch to one inch long, and silky. Cunes five inches long, and one inch and three quarters broad, and quite straight. Scales elerated in the middle, transversely keeled, three-quarters of an inch broad, and half an inch long ; protuberance derressed, with a slight muero in the ecntre.

This splendid tree is mecqualled by any other in Mexien, with its long tufted branches, commencing within a yard of the ground. It grows on the opposite side of the mountain west from Ixtacihuatl, at an elevation of 8000 or $!000$ feet.

No. 59. Pinus Russelliadid, Limelley, the Tuke of Bedford's Pine.
Syn. Pinus Dolleriann, Roc=l.

| " | horizuntalis, Rocel. |
| :--- | :--- |
| " | Ortgisiana, Ruezl. |
| " | Rinzi, Ronel. |
| " | Rohani, Ror=l, |
| " " rubescens, Roe=l. |  |
| " | Troubezkoiana, Roczl. |

Leaves in fives, rather stout, seven or eight inches loug, and of a
beautiful deep green colour' ; outer ones curved, thickly set on the branches near the extremities, and slightly angular when full grown. Sheaths nearly one inch long; persistent, rather rough, and sealy. Branches very stout, but not numerous, and wather irregularly placed round the stem, but sometimes in whorls. Cones seven inehes long, and one inch and three-quarters broad at the base, clongated, pointed, straight, and with a very short foot-stalk; horizontal, or slightly drooping, in whorls round the branches, and with a hard shining surface, destitute of resinous matter. Seales rhomboid at the apex, forming a small pyranid, with a straight blunt point, and of a dull grayish-brown colour, very hard, and compact. Seeds middle-sized, with rather short but broadish wings.

A benutiful tree, from 60 to 80 feet high, with fow but very robust branches, loaded with fine long dark green leaves.

It is found on the highest point of the "Cumbra" and "Carmen," and on the road from San Pedro to San Pablo, near Real del Monte, in Mexico.

It is tolerably hardy.

No. 90. Pinus Strobus, Limaus, the Weymouth Pine.
Syn. Pinus C'anadensis quinquefolia, Duhamel.
Leaves in fives, very slender, three or four inches long, threesided, soft, and of a light glaneous or bluislı-green colour, marked when young with silvery channels on one side. Sheaths very short, almost wanting, and soon falling off. Bramehes short, in whorls, thinly clothed with foliage, and having a very smooth shining bark. Concs long, narrow, slightly curved, cylindrical, tapering to rather a slarp point, bright-green when young, pendulous, and from five to six inches long, and one inch and a half broad, with a foot-stalk three-quartors of an inch long. Scales thin, sinooth, oblong, with the upper part thickened, six-eighths of an inch broad, but diminishing in size, and more pointed towards the apex, lying rather loosely over each other,
and full of resinous matter. Seeds small, ovate, of a dull gray colour, and with the wings one inch long.

A tall tree, with a smooth bark, growing from 100 to 150 feet high, and from four to six feet in diameter, forming a small conical hearl, and free from hranches three-fourths of its height.

It is foum on the sides of liills from Camada to Virgimia, but attaining the largest size in the state of Vermont and New Hampshire, near the commeneement of the River St. Jawrence.

The timber is white, light, free from knots, and easily worked, and is known as the Canadian White Pine, and Pumpkin Pine.

It derised the name of Weymouth Pine in ennsequence of Lorl Weymonth, shortly after its introduction into England in 170., having had a large quantity planterl at Longleat, his lordships seat in Wiltshire.

Piaces Strobics himpibodid, Boath, the Short-leaved Weymouth Pine.
Syin. Pimus Strohus compres ca, Iochligre.
This variety has much shorter and slenderer leaves than the common Weymouth line, and with the leaves gruwing clusely compressed round the shonts.

A singular-looking variety.
Pinus Stromes vaisa, hifight, the Dwarf Weymouth Pine. Syin. Pinus Strobar umbraculifera, Hort.

$$
\begin{array}{cccc}
" & " & " & \text { rumila, IIort. } \\
" & " & \text { talbuliformis, } \text { IIort. } \\
" & " & \text { Brogroittii, } \text { Hort. }
\end{array}
$$

This variety forms a small, dense, flat-topped bush, seldom more than two or three feet high, and the same through the hend. The leaves are very slender, and from one and a half to two inches lung.

Mr. Loudon makes mention of a plant which, after being I2
planted thirty years, was only 18 inches high and two fect through the head.
Pinus Strobus nivea, Knight, the White Weymouth, or Snow Pinc.
Syn. Pinus Strobus alba, Loudon.
". " niven, Booth.
This varicty differs from the species in having the leaves erectly-spreading, more dense, and of a very dark-green colour when fully grown, but when young of a silvery white on the ${ }^{1} 1$ per surface.

This kind bears considerable resemblanee to Pinus monticola, but the leaves are less dense on the shoots, and much slenderer, and the cones narrower, and of a bright green colour when young, while those of Pinus monticola are of a dull purple.

A liandsome and very hardy kind, of which there are gond specimens in the Waltham Cross Nursery, and a fine tree at Brocket Hall, in Hertfordshire.
No. 91. Pinus tenuifolia, Bentham, the Slender-leaved Pine.
Leaves in fives, very slender, from eight to ten inches long, bright, shining green, and sharp-pointed, slightly angular, and wavy. Sheaths persistent, half an inch long, and rather jagged at the ends. Branches numerous, very slender, drooping, and vertical. Cones oval, rather small, tapering to the point, from one inch and a half to two inches long, and one inch broad, several together on the branches, in a horizontal direction, or drooping position, when full-grown, and of a dark-brown colour. Scales rather small and numerous, half an inch across, thickened at the basc, uneven-sided, oval, a little angular in the middle, depressed, with a projecting blunt point in the ecntre, and the margin rounded and rather thick. Sceds small and black, with rather large wings, one inch long.

A large tree, found to the east of the city of Guatemala, growing in ravines, and on the mountains of "Choacus," in the Province of Vera Paz, at an elevation of 5000 fect
growing 100 feet high, and from three to five feet in dianeter, forming dense forests, where scareely any other plants can exist.

It is very tender, and unfit for the eliniate of England.
No. 92. Pinus Wincesterlata, Gurdon, the Marquis of Winchester's Pine.


Leaves in fives, from $1: 2$ to 14 inches in length (on the wild specimens.), rather stout, three-edired, thicklyset on the brauches, glaneous-green, and much resembling those of Pinus filifolia, but broader and shorter than those of that species. Sheaths persistent, or not falling off; about one inch in length, smouth, and entire, or nearly so. Seed-leaves on the young plants mostly eight in number, and rather chort. Branches few, spreading, irregular, and rather stout. Buds imbricated, norresinons, and large. Cones pendulous, on very short foot-stalks, two or three logether, hat sometimes single, always much incurved, and tapering pretty regularly from the base to the point from eight to ten ineles in length, and three inelees and a half broad at the base, with from twenty-six to thirty rows of seales. Seales tive-eighthes of an inch broad, much elevated, particularly those upon the middle of the eome on the upper or outer side, where they become conical, and from three-cighthes to a frarter of an inch high, while those on the under side and towards the extremities are mueh smaller, less clevated, and nearly all of a size; and from amongst which a large quantity of clear resin exudes, particularly on the cuter side near the base. Seeds mather small, and angular, with rather broad wings one inch in lengtls

This pine was first introduced by the Marquis of Winchester, but afterwards was obtained in abundance by Mr. Hartweg, who found it growing on the most ele vated parts of the Cerro de Sim Juan, or Saddle Mountain, near Tepic, in Mexico, attaining a height of from 60 to 80 feet. It is very distinet from any other hitherto described, particularly in its rery long, incurved, resinous cones.

It is not hardy in England.

Gen. PODOCARPUS. Ilcriticr.
Flowers, dioccious, lurely monocious.
Fruit, drupaceous, inverted, and adhering.
Seccls, hard, and bony shelled.
Lecues, cither opposite, alternate, or seattered, linear or oblong, and one-nerved.

Sced-lecures, in twos.
Name, derived from " rous," a foot, and "картоя," a fruit, fruit foot-stalked.

All natives of the temperate zones of Asia, Afriea, and America.

## Section I. EUPODOCARPUS, Eullicher; on, The True Podocariss.

Fruit, solitary.
Receptacle, fleshy, connerted with the bracts by the axis of the short spike.

Leaves, alternate or seattered, linear, and one-merved.
No. 1. Podocarpus affinis, Scemame, the Related Podocarpus.
Leaves elosely arranged all round the branchlets, oblong, or oblong-lancoolate, erectly spreading, leathery, straight, tapering and somewhat twisted at the base, with the middle nerve
prominent, and from one iuch and a quarter to one and a half long, and one-third of an inch broad.

A kind of which little is known; found on the Viti and Fiji Islauds, by Dr. Scemann.

Nu. 2. Podocarpes asaba, Bleme, the Bitter-fruited Podocarpus.

> Syy. Podocarpus Dulcamara, Sefmicenn.

Leaves alternate, or frequently opposite, somewhat in two rows, smoth on the margins, linear-lanceulate, closely set along the shoot., and tapering to a long point; from two to four inches longe, and three-rguarters of an inch broad, with a prominent rib on the under side, and channelled above; green on hoth sides, on short fout-italks, slightly undulated and flexible. branches in whonls, very spreading and slender; lateral ones somewhat in whorlo, and swelled round the base. Buds small, sonnewhat globular, and covered with seales. Male flowers in axillary bundles, of fiom three to five, on short stout peduncles, from half to one inch in length, and naked at the base. Fruit globose, three-quarters of an ineh long, and of a dark violet colsur.

A tall tree, growing 200 fect high, with is spreading head, foumd on the highest parts of the voleanie mountains of Salak, (iecle, ©fe., on the western part of the Island of Java, where the people call it "Kimerak."

It is rery tender.

> No. 3. Podocarbes Avilotifolis, Pulatore, the Natrowleaved Iodocarpus.

Leares cruwded all romb the branchiets, spreading, somewhat rigid, straight, very murow, linear, acute, and spinypuinted, taperind, and somewhat twisted at the base ; marked with a furrow along the middle un the npper side, fiat on the mifos, and two inches long, and one line hroad. Male catkins frour or five in a fasciele at the end of an axillary peduncle one-thind of an inch long. Yruit unknown.

A kind of whieh little is known, found by Mr. Bridges, in Bolivia.

No. 4. Podocarpus abistulata, Parlatore, the Awn-leaved Podocarpus.
Syn. Podoearpus Purdieana parvifolia, Grisebect:
Leaves loosely arranged all round the branchlets, spreading, leathery in texture, straight, linear-lanceolate, bristle and spiny pointed, narrowing and somewhat twisted at the base, chanuelled along the middle on the upper side, revolute on the edges, and from one to two inehes long, and a quarter of an inch broad. Male catkins solitary, cylindrical, and from one-third to half an inch long. Fruit ovatc-oblong, and onethird of an inch long, and about lanlf as wide.

A small tree, found in the eastern part of the island of Cuba.

> No. ̌. Podocarpus bracteata, Blume, the Bracteated Podocarpus.

Leaves scattered, but sometimes in close whorls, straight, or somewhat falcate, linear-lanceolate, and regularly tapering to the base, flat on the edges, furnished with seales at the base, slightly twisted, very acute pointed, leathery, a little glossy, and from three to fire inches long, and from four to six lines broad on thie adult trees, but from cight to nine inches long and from eight to ten lines broad on the young plants. Branches horizontal, cylindrical, and covered with reddishgray bark. Branchlets opposite. Male catkins collected in bundles, rarely solitary, oval, and alnost sessile ; females axillary, solitary, and furnished at the base with a bractiform involucre; receptacle thick. Fruit globose, half an inch long; and of a violet-brown colour.

A large tree, growing 80 feet high, with a straight stem, covered with a smooth bark, and the top much branched, found in the forests of Amboyna, on the voleanic mountains
of Burangrang, and in the western parts of Java, and callel by the natives, "Ayewen," and "Essoyr:"

It gets very much reduced in size and stature as it ascouls the mountains, and has the following variety, according to Dr, Blume :-

## Podocirples bracteata bretibes, Blume.

This varicty has much shorter and narrower leaves, and shorter peduncles. Fruit elliptic, or somewhat globular, and very much smaller.
lt is found on the western mountains of Jiwa.

No. 6. Pudocarpes C'minisa, Richarel, the Chili Poducarpus.
Syn. Podocarpus saligna, Don.

Leaves linear-lanceolate, acute-pointed, straight, rarely falcate, alternate, spreading, sersile, entire, flat, smooth, of a bright green colomr, and taperiug to both ends, but most towards the point; from three to furn inches loneg, and from two to four lines broad, with a single nerve alon", the middle of a paler colour. Branches very numerous, scattererl, altermate, very rarely opposite, or in threes. Plowers diceciour, the male ones very small, and sessile on the ends of the branclifets; the females, on one-flowerel peduncles, solitary, and rising from the base of the leaves on the hanches. Fruit solitary, very rarely two in mumber, it the extremity of the receptacle, fleshy, ovate, obtuse, tark purple, smooth, slining, and with a slight point on the apex, and from two to four lines long.

A tree from to to fit) feet high, foums abundantly on the mountains of Chili, where it is called " Maniu Pino."

This kind is frequently misnamed Audinu, in the wurseries.

No. 7. Podocarius Chinensis, Wallich, the Chinese Podoearpus.


Leaves linear-lanceolate, reflexed on the margins, slightly pointed, closely placed, alternate, somewhat two-rowed, and refleeted on the margins, green above and glaueous below on the younger ones, but the older ones are of a paler eolour, with an elevated straight rib along the middle on the mper surface, terminating in an obtuse point, and from one and threequarters to three inches long, and from two to three lines wide. Branehes erect, spreading, altermate, or opposite, or sometimes somewhat vertical. Branehlets short and slender. Male flowers numerous, axillary towards the extremities of the brinehes, frequently connected in threes on the same peduncle, and rather more than an inch long; fenale Howers on lateral foot-stalks, with a fleshy reeeptacle nearly an ineh long. Fruit cylindrical, oblong, obtuse-pointed, or slightly tapering to the base when young, but when old more globular, of a shining green, tolerably intense, and eovered with a glaneous powder. The males and fenales are on separate plants, the male one being in general more delicate, its branehes more ereet, much shorter, and not so thickly furnished with leaves, which in general are more glaucous, not so long, a little broader, and more obtuse than those on the female plant.

A large bush, or small tree, with ia straight stem, found abundantly in China and Japan.

The Chinese name for this species is "Sin-koja-Mlaki" (the
common or Wild Maki), and the Japanese one, "Inu-Maki" (false, or spurious Maki). "Maki" is the name commonly applied, both in China and Japan, to all the large-leaved, Jewlike plants-such as Poducarpus, Sciadopitys, de.

## Pudnenrpes Chmexsh a'REA, Gorlon, the Golden Tariegrated Chinese Podocarpus.

This varicty dillers from the original form of the plant, in having its leares sumetimes one half golden yellow, or furnished with fellow marginal loorders, or striped down the midale like a riblon.

It was first sent the the Royal Numery at Biteshot, liy Mr. Fortune, from Jiljant, in $1 \times 151$.
 gated Chinen Pulocarpus.
Another fine variegated variety, with silvery-white stripel leaved, varionsly marked, sometimes with hood bands maning the cutire length of the leaf, like a ribton, while wther leares are half white and half green, or all white and all green.

This handsome varicty wan fint sent to the lingal Numery at Bacrehot, in 1501 , hy Mh: Fortune, from the mieghbumbino i of Yeclde, in Japan.

No.s, PuDucarncis cornacra, Richurd, the Leathery-leaved Podocarpus.
Syn. Voducarpus Yicea, Don.

Antillarmm, Ri. Brozen.
" Taxus temuifolia, W" ickistrem.
Leaves elliptic-lanceolate, tulerably thick, leathery, shiming, sessile, or tapering to the base into a very short foot-stalk. getting narrower to the apex, and temmating in an ahmost whtuse point; fom two to thee inches longe, and nearly half an inch broad in the widnet part, with an elevated mid-rib muning along, the centre on both sides, but largest on the under surface. Branches spreading, horizontal, alteruate, or
sometimes oppusite, or in whorls, frequently slender, and naked on the grenter part of the larger ones, and tubereulated by the fallen leares. Fruit glubose, solitary, axillary, and very small, on short foot-stalks, with a fleshy receptacle, thickened, and sloping to the top. Seeds oval, or oblong, slightly curved, and terminating on the top in a short blust point.

A small tree, from 40) to $5(0)$ feet high, found on the Antilles, the island of Montserrat, and on the Blue Mountains of Jamaica, where it is enlled "Yacest."

It is not hardy.
No. 9. Podocarpus corrugita, Gurdon, the Corrugatedleaved Podocaipus.
Leaves very narrow, linear-lanceolate, acute-pointed, straight, and tapering inueh to the base; from three to four inehes long, and two lines wide, with an uneven or corrugated surface above, and minutely streaked or irregularly marked with small bright green stripes, on a yellow ground colour', all over both faces, and furnished with an elevated rib along the middle of each leaf, both above and below.

A large evergreen bush or small tree, with delieately varicgated foliarge, much cultivated in the Japanese gardens about Yeddo, and sent from thence to Mr. Standish, of the Royal Nursery at Bagskiot, by Mr. Fortune, in 1861.

> No. 10. Podocimus cervifola, Comiere, the Curvedleaved lodocarpus.

> Syn. Podocarpus Antarctica, V on Houtte. .$" \quad$ Humboldtii, Hort.

Leaves orate-oblong, alternate, thick, leathery, smooth, shining, stiff, revolute, and closely placed along the shoots; from two to five inches long, slightly coneave on the baek near the margins, flat on the upper surface, a little reflected on the edges, and with a projecting rib along the middle, on both faces,
tapering at the base into a short stout font-stalk, regularly and briefly terminating in a thick obtuse point, never acute, but frequently hack.

A large tree, supposed to be found on the Andes of Patagonia and Chili, but of which little is known.

## No. 11. Podocirpes discolor, B7ame, the Discoloured Podoenrims.

Leaves thickly set on, or scattered aloner the shoots, linearlanceolate, quito straight, leathery, stili, :mil tapuring to a sharp pungent peint, from one inch and a half to two inches and a hati long, and rather more than a quarter of an inch wide, attemated at the bass, ant m re or less reflect il on the margins, fightly concawe, and of a lright glossy green above, glaucous below; with an elerated rib on both fices, but most projecting on the moder one. Bramehes in whorls, lateral ones ascending: buds oral, terminal one solitary, and covered with scalcs. Flowns and frmit unknown.

A large tree, covernd with a madioh lark; fuum in the wat furests on the eastern part of Java, particularly on the most elevated parts of the rolcanic mountains of Tjerimai and 'T'cribon.

It is very tender:

> No. 12. Podocarpes Drouyaina, Muelle, Drouyn's Podocarpus.

Leares thickly seattom 1 along the hanchlets, erectly sprealing, rather leathery, straight. linear, tapuring to a somewhat fine spiny point and with a short and somewhat twisted fortstalk, and from two to trou and a half inches long aud once line hroad. Receptacle thick and oblong. Fruit ovate-glubuse, with an achte point at the apex, and three-quarters of an inch long and half an inch broatl.

A small tree finmel along the banks of the Tons River in the south-western part of New Holland.

No. 13. Podocimples blata, R. Bioum, the Lofty Podocarpus.
Leares alternate, spreading, lincar, tapering to an obtuse point at both extremities, from three inches and $a$ half to four inches long, and about four lines lroad. Fruit axillary, solitary, and one-seeded on a slonder receptacle ; receptacle cylindrical, almost club-shapod, with the seed glubular:

A tree, of which little is known, found on the eastern part of New Holland at Lockingham Bay:

## No. 14. Podocirpus moneata, L'llemilier, the Elungated Podocarpus.

Syn. Podocarpus pruinosa, Zcyheri.
" $\quad$ " $\quad$ linearis, T'un Houlle.
"
" Thasus elongata, Solentreri.
"
"
"aponsis, Somurch:

Leaves linear, or oblong-lanceolate, straight, rarely faleate, attenuated, stifl, tolerably thick, and rather simooth at the edges; from one inch and in quarter to one and three-quarters long, and two lines broad, of a dark green or glancous blue colour, with a rib, along the upper surfface, a little elevated, but hardly visible on the under side, sessile, or regularly tapering to a short foot-stalk at the liase, very bluutly and regularly rounded on the top, and terminating in a short mucro ; sometimes a little pointed or obtuse, but frequently wanting. Branches opposite, of in whorls, upper ones ascending, lower ones sometimes deflected, and spreading. Branchlets short, and slightly angular. Male flowers cylindrical, with numerous spirally imbricated anthers. Peduncles axillary, solitary, and from four to five lines long, terminated by a much shorter roeoptacle. Receptacle frequently fleshy, thick, oblique, slightly bifid on the top, and carrying an oral or globular seed about the size of a gooseberry, which is marbled on the outside.

A large tree, from 30 to 70 feet high, covered witlı a grayishbrown bark when old, and glaucous on the young shoots; found
at the Cape of Cood Hope, and in Abyssimia, on the mountains in the province of Goonjam, at an elevation of (600) feet, where it is called "Sigha" by the poople.

It is rather timder.

> No. $7 \%$ Popocsurts Exmbenernis, Curiore, Endlichers Podgearpus.

Sim. Pollucarpus mbilis, Inomt.
Leaves alternate, clusely arrangel on the hranches, sumewhat two-1twod, straight, wery slighty faleate, mululated, and not thickened in the margins on the alult trees; thase on the branchlets are ahmost oval, or elliptis, with several leases in a whorl, more roundeal at both extremitios, and nuth shorter; from four to seren inches long, anl from six to eight lines broad, pale green moth siden, hint frequently much yellower on the under one, and with short stont foot-stalls.s. Franclesmontly in whords of three ifiry rarely seatered), ancendinge, and little divided. Bumblets rery flome stout, and cowerd with a yellowish bark. I'mit monkwon.

A tall tree, cowered with a jellowinh-hwown bark, smonth at first, but afterwats much wrinklel when chl, and of which little is known, except that it is a rery handsome and monst kind, remathonlle for its lagre ample foliage. It is suppened to come from the northern parts of India, amb must probably from Nepme.

##  Powlueargus.

Leares thinly seatered along the fanchlets, epreading, leathery in texture, straight or somewhat falcate, elongratelanceolate ; blunt at the points, tapering and sonn*what twisted at the base, with a single prominent nere along the middle tuminating in a slender reute point at the apex, and from tiree-fourths to an inch longe ant half an ineh broad. Male catkins solitary, cylindrical, obtuse, closely placed, and forming
loose taper bunches on the terminal hranehes, accompanied by scale-like leares of various sizes. Fruit unknown.

A small tree found in Tasmania, and on the eastern part of New Holland, particularly on the Grafton Promontory.

## No. 17. Podocarpus eurhyscha, Miquel, the Well-beaked Podocarpus.

Leaves alternate, elliptic-lanceolate, acute at the base, somewhat abruptly acuminate at the apex, and with the under side pallid and furnished with stomates, and the mid-rib very prominent on both sides. Fruit unknown.

A kind of which very little is known, found by Teysmann in the western part of Sumatra, at Battang and Barus.

> No. 18. Podocimpes Eaf.cith, 12 . Broun, the Sickle-leared Podocarpus.

> Syn. Taxus falcata, Thunberg.

Leaves somewhat in two rows, linear subfaleate, acutepointed, one-nerved, altemate, mucronate, and from two to four inches long, and a quarter of an inch broad. Flower spikes short, axillary, abortional, and single fruited. Seeds globular, taperiug to the base, and without the fleshy receptacle.

A species of which little seems to be known, and said to be found at the Cape of Good Hope by Professor Thunberg.

## No. 19. Podocarpus falciformes, Pailatore, the Sickleleaved Podocarpus.

Leaves somewhat two-iowed along the branchlets, leathery in texture, fulcate, tapering to the points, and mucronate, attenuating and rather twisted at the base, and with a prominent nerve along the middle, and a quarter of an inch long, and two lines broad. Fruit unknown.

A shrub or small tree, with spreading branches, of which little is known, found on the Poe and Mettang Mountains near Surawak in Borneo.

No. 20. Ponocarptis giomprata, Don, the Rumd-head-fruited Porlocarpus.
Syn. Potucarpus rigida, Nlutach.
,, Jınipeusis riceida, $P^{\prime}$ (urou.
Leares linear-lanceolate, stiff, straight or somewhat fileate, very sharp-pointed, alternate, flat, one-nerved, attenaited at the base, shining, and smooth on both surfices; from onfe to one inch and three-quarters long, and from one to two lines broad. Branches numerons, cylindrical, leafy; aml ebsered with a yellowish-brown smooth hark. Male ratkins short; three-quarters of an inch longe, cylindrical, united in a fascicle of fise or six on an axillary foot-stalk. Fruit unknown.

A tree found in the neighbourho cl of " Panno," in Jern.
No. 21. Ponocurprs Japonica, Sirbull, the Jajan Pulocarpus.

> Syn, Porlocarpu* lancerlata, Mow.

Leaves alternate, flat, linear-lancenlate, clongated, oliturepointed, thick, leathery, and stifl; from four to eight inches long, and about half an inch wide, with an clevated rib, almost acute along the upper surface, but romided on the under one, and tapering into a long slender point at the apex, and into a short stont foot-stalk at the base.

A simall tree, fimml plentifil in Japan by Dr. Siehola.
Podocarpts Japontca lifgastisima, Mont, the Very Elegant Japan Porlocarpus.

- A somewhat variegrated variety of the Japan Podocarpus, with long, linear, narrow, lance-pointed leave, which are, when young, of a pale yellow, but afterwards change to a dull grown, and finally, when fully matured, lecome of the usual colour of the species.

No. 22. Podocabpr's Kublana, Sicbold, the Corean Porlocarpus.

> Syn. Cephalotaxus Koraiana, Hont. " Taxus japonica, Loddiges.
> $" \quad$ Fortunci, Hort.

Leaves regularly linear, somewhat falcate, alternate, or nearly spiral by their closeness along the shonts, leathery, stiff, revolute, and terminating in rather an olituse end, furnished with a hard, acute point, from one and a quarter to two inches and a quarter long, and one line aud a half broad, without, or on very short foot-stalks, of a deep glossy green, with a marrow, acute rib along the middle, on the upper surface, and glaucons on the under side, except on the centre nerve and raised margins, which are of a bright glosisy green, and all terminating at the apea in a short spiny point, more or less acute. Buds covererl with ummerous persistent, oval, imbricated seales, keeled on the back, and pointed. Branches strictly crect, twiggy, stiff, and thinly furnished with laterals; branchlets very short, and with the branches chamelled along their surface by the long decurrent base of the leaves, which, after they fall oft, cause the branches and stems to become more or less tubereulated along the surface. Fruit unknown.

A small fastigiate bush, full of erect branches, thickly clothed with leaves, and not growing more than two or three feet high, found on the Chinese peninsula of Coren, and in Japan, where it is abundantly grown in the town gardens, and found wild on the mountains of Nagesaki.

It is quite hardy, and a very desirable little evergreen for simall gardens.

No. 23. Pomocatrut's laeta, Hoibrenti, the Red-nerved Podocarpus.
Leaves spréading out, or deflected, linear-falcate, sessile, or tapering to a very short foot-stalk, from one inch and a half to one iuch and three-quarters long, and a quarter of an inch wide.
with a nhap, rigid mucro at the point, stightly thickened and "onvex on the apper surface, with a slight furrow, or little conenve glaucous bands on the under part, on each side, of a reddish mid-rib. Branches verticillate, very rarely altermate, spread out, or dechining, and not mmerous or branching. Branchlets few in mmber, spreading, opposite, or in threes, very rarely seattered singly, hat slightly channelled. Fruit unknown.

A tall tree, with a straight eylindrical stem, foum on the enst const of New Hollanr.

No. Ot. Podochapls Lanberti, Khowh, Lambert's Podocalpus.
Leaves resularly linear: sharp-pwinted, :und tapering to the base, straight or falcate, without any font-stalks, slender; and loosely seattered, smooth, or nearly so, on the mper surface, and flat, from one mech and a quarter to one inch and three-quarters long, and two lines hrond. Male catkins short, in fascicules, on axillary fort-stalks, scaly at the base, foot-stniks of the fronit much longer than thone of the reeeptacle, which is one-fruited. Fruit globular or oblonge thininge small, and about a quarter of an inch long.

A rolmat tree, foumd on the mountains of Brazil.
No. 2.5. Pobotaties Lempostiched. Bheme, the Slenderspiked Podocarpus.
Leaves somewhat in whorls, linear-lanceolate, alternate, straight, or sometimes slightly faleate, leathery, and closely placed on the shoots, from two to five inches long, and from three to six lines broad, tolerably thick, acute, with a pungent point, flat, chining, and tapering to the base, which is frequently a little twisted, of a dull green colour on the upper surface, bit moch paler below. Branches and branchlets much divided, somewhat in whorls, cylindrical, and with the stem and prinripal branches covered with a rongh hark, full of cracks. Male catkins sometimes solitary, or in pairs, or in threes, fumished
at the base with thin, shrivelled serles, two or three in number, and more or less deciduous. Fruit unknown.

A tree fifty or sixty feet high, found on the mountains in the Island of Borneo.

No. 26. Podocarpus macrophyda, Don, the Long-leaved Podocirpus.

> Syn. Podocarpus verticillata, Hort.
> longifolia, 11 m .
> Taxus macrophyilla, Thumbery.
> ," longifolia, $1 / 0 \%$. Maki-fortens, Krempifer.

Leares alternate or seattered, linear-laneeolate, or somewhat oblong, flat on the edges, clistant, spread out, and of a dry; leathery texture, from two to four inches long, and about half an inch wide, with an elevated rib on buth sides, but principally on the upper one, rery rarely falcate, mostly straight, of a pale, shining green, and tapering to a short, round foot-stalk at the base, and obtuse point at the ipex, sometimes withered, or furnished with a stiff; blackish point. Branches numerous, mostly in whorls; branchlets slightly angular, and rough from the fallen leaves. Male catkins furnished at the base with scales; femala peduncles axillary; solitary, one-fruited, and furnished with two bracteas on the top. Fruit oval, smooth, and about the size of a pea.

A tree growing from forty to fifty feet high, with rertical branches, and an ample head, found abundantly in Japan, and much cultivated by the Japanese in their gardens.

The Chinese names for this species are "Fon-Maki" (true Maki), and "Sin-Mraki" (common Maki); and those of the Japanese, "Inu-Miais" (wild Maki), and "Ksa-Maki" (foetid Maki).

The timber is white, light, exeellent, and free from the attacks of insects.

No. 27. Podocarpus macrostacira, Perlatore, the Longspiked Podocarpus.
Leaves thickly seattered along the hranelilets, oblong-lanceolate, obtuse at the points, spreading, very leathery in texture, revolute on the edges, shining, and channelled aloug the ${ }^{1} p$ per surface, on short and rather twisted fout-stalks, and from whe to two inches long, and one-third of an ineh broad. Male catkins solitary, sessile, cylindrieal, and bracteated at the base. Fruit ovate-globose, with a short, blunt, oblique point, and fon lines long, and nearly three lines wide.

A tree found on the Colmmbia mountains, and Sierra Nevada, in California.

No. 28. Jodocarples Maxin, Mookir, Mr. Mann's Podocarpus.
Leaves somewhat two-rowed, elongate-lanceolate, slightly falcate, narrow, acmminate, bristle-pointed, on somewhat terete foot-stalks, shining on the upper surface, broadly nerved alones both sides, and from three to five iuches long, and from two to
 known.

A kind of which little is known, found un the Island of St. Thomas, in Western Afriea.

No. 20. Pudocarpu's Meyerlaxa, Endlichei, Meyer's Podo(anturs.
Syu. Podocarpus elongata, F: Me yer.
Leaves thickly scattered al hig the limeles, broarlly-limear', or elliptic-lanceolate, straight, or very slightly falcate, stiffe, thick, and leathery in textmre, rather flat on the margins: somewhat acute and slightly phugent at the apes, trpering and somewhat twistel at the batse, with the upper shrface of a dark green or glancous blue, and but slightly marked by the longitudinal furrow along the middle, and from one and a
quarter to two inches long on the principal branches, but greucrally only from three-quarters to an inch long, and from one and three-quarters to three lines broad on the other parts of the tree. Brauches in whorls and spreading; branchlets angular and glaucous. Male catkins cylindrical, solitary, or two or three together, in short, erectly-spreading, axillury, bracteate filseicles, and from three to four lines long; receptacle thiek, fleshy, oblique, and slightly bilobed. Frnit globular, half an ineh long, and about the same wide, and covered with a glaucous bloom.

A large tree, with a sprending head, and verticillate branches, and angular glaucous bramehlets, found at the Cape of Cood Норе.

It is tender.

## No. 30. Poducirpu's seglecta, Blume, the Nogleeted Podocarpus.

Syu. Podoearpus Junghuhniana, Miquel.
Leares somewhat in two rows, or seattered, linear-laneeolate, acute-pointed, and more or less reflected on the margins, from two to four inches long, and from half to three-quarters of an inch broad, with an elevated rib on both sides, but most on the under side, and tapering into a very short twisted foot-stalk. Branches opposite, or in whorls, cylindrical, and reddishbrown ; branchlets opposite, two-rowed, and almost augular; buds covered with scales. Male eatkins eylindrical, in bundles, on short, axillary peduneles, surrounded at the base with coneave membrumaceous scales, which soon fall off:

A tall trec, growing upwards of 100 fect high, found in forests on the western part of the Island of Jara, at an elevation of 5000 feet, particularly at "Kiurang," in the provinee of Bantam, and about "Pangaraughu."

It is very tender.

No. 31. Podocarpus yermfolia, $R$. Biorm, the Nerimmleaved Podocarpus.
Syn. Podocarpus macrophylla, Wullich, not Don.
Leaves altermate, but mostly very closely placed on the branchlets, erect or spreading, lanceolate, and aeute-pointed, frequently reflected on the under side, and regularly attenuated to the hase with a stout petiole, wery thick, flat, and leathery from three to six inches long, and from a quarter to threequarters of an inch hroad, of a bright green on the upper surface, but mueh paler below, and traversed along the inidde by a very clevated rib, almor acute on the upper side, but leas elevated and more enlarged on the under one. Branches in whorls, slender, and provided with hacts at the base. Mate eatkins long, axillary, and -olitary; fenules on axillary, oneHowered peduncles, longer than the receptacles; reepptrele oblong, and obliquely lobed. Fruit eatable, with a sweetish tastc.

A large tree, fomm in Nepal, sikkim, Sincapore, and Penang, growing forty feet high, with horizontal hranches in whorls.

This tree is called " (Gomsi," in Nepal, amb affords sur article of food; the pedundes of the fruit, mot the fruit itself, are edible.

It is mot hards:
Nu. 32. Podochapus Novie-Caledunit, Virillard, the New Caledonia Podocarpno. Sym. Podocarpus rivularis, P'euchor.
Leaves linear-lanceulate, straight or slightly curved, perceptibly narrowing to the bave, aeute, but not siony-pointed, revolute on the margins, ind marked on both sides with in longitudinal nerve, and from one and three-quarters to three inches long, and one line and a half brout. Mate catkins in twos, axillary, and nearly sessile Fruit oval, smooth, shining, and one-third of nu iuch long, and one line and a hatf broad.

A somewhat pyramidal bush, with fastigiate branches, found along the banks of streams in New Calcelonia.
No. 33. Podocarpus nubighand, Lindley, the Cloud-born Podocarpus.
Syn. Sixc-Gothrea gracilis, IIort.
" Podocarpus nulbicola, Makoy.
Leaves linear-lanceolate, straight or soinewhat falcate, thick, flat, rigid, and attenuated at the baso, with a short, stout footstalk, and terminating in a short, acute, spiny point at the apex ; from threc-quarters of an inch to one inch and threc-quarters long, and one-cighth of an inch broad, with a single nerve along the middle; green above, and marked on the under side, on each sitle of the rib by a broad band, more or less glaucous. Fruit oblong, growing singly in the axil of the leaves, on very short istalks, with the receptacle two-lobed, obovate, and un-erfual-sidecl. Seeds obloug, slightly bossed, and curved inwards at the point.

A large tree, found on the colder parts of Chili, the Andes of Patagonia, in the province of Valdivia, and the Island of Chiloe, where it is called "Pino." The firuit is pleasant to the taste, and catable, and is used by the natives for food.
No. 34. Podocarpus oleifolia, Don, the Olive-leaved Podocarpus.
Syn. Podocarpus Chilena, Lechler.
Leaves lanceolate, acute, very entire, leathery, smooth on both sides, one-norved, with a sunken channel on the upper surface, along the middle nerve, reflected on the edges, and tiluering at little to the base ; from one to one inch and a half long, and from two to threc lines broad. Branches crowded, smooth, and thickly furnishod with leaves. Male catkins without foot-stalks, cylindrical, solitury, and about one inch long; foot-stalks of the fruit filiform, two-lobed, smooth, about three quarters of an inch long, and two-flowered, one always abortive. Fruit oval, solitary; tery smooth, reflected, and onc-third of an inch long.

A tufted tree, with closo branches, and covered witl a yellowish-brown bark, found on the mountains of Chili and Peru.

It is not hardy.
No. 3.5. Pudochirés Parvifolis, Pertatore the Small-leaved Podoc:arpus.
Laaves small, and thickly scattered alung the brauches, lincar-oblong, acute, mucronate, and somewhat pungent, tapering to a short putiule, and somewhat twisterl at the hase; upper surface smooth and marked with a longitulinal furrow, margin hardly revolute. Fruit orate, pointed.

A lime of which little is known, found in New Holland by the late Allan C'umingham.
 spiked Podocapus.
Leaves lanceulate, sharp-pmintel, leathery in texture, curved at the margins, and from one and three-ruarters to three inches long, and from two and a hatif to four lines broad. Male flowers asillary, somewhat in threes, and provided at the base with a scale-formed involuere. Frnit on axillary foot-stalks, and solitary:

A large tree, with a straight stem, and very branching ample heal: found at Sincapore, in Borneo at Sarawack, and on the Prince of Wales Island, where it is called the Wax-Damuara. This species is very like Podocarpus loracteata, but differs in having the leaves and catkins inneh shorter but stouter, and in the receptacle beinor much thicker, aunl the fruit more globular:

No. 37. Poducarples Pundansa, ITumint; Purdie's Jamaica Pulocarpus.
Syn. Polocarpu; Jamaicensis, Ifort.

Leaves elliptic, or oblong-lanceolate, thiek, leathery, very smooth, and shiming on the upper surface, Hat, straiglt, very
rarely falcate, and slightly recurved on the margins; from three to five inches long, and from three quarters of an inch to one inch broad, of a bright green, regularly tapering into a short stout foot-stalk at the base, and from the middle of the leaf on cach side to the point, which is terminated by a stout, short, mostly black, obtuse point, but sumetimes variable, those of the young plants being acute and spiny. Branches spreading, horizontal, and marked by the scars calssed by the falling off of the old leaves. Fruit with the foot-stalks much shorter than the receptacle, which is bificl, and one-fruited. Seeds somewhat globose, terminating on the upper part in an oblique little flexible point.

A large tree, growing upwards "of 100 feut ligh, found on the castern side of the Island of Jamaica, at an clevation of from 2500 to 3500 feet.

It is very tender.
No. 38. Podocarpus Rumpuit, Blume, Rumphins's Podocarpus.
Syn, Lignum Emanmu, Rumphius.
Leaves sometimes in whorls of from three to four on the young shoot, but seattered, or somewhat in two lows on the more adult trees, linear-lanceolate, spreading, acute-pointed, very larely bluut at the ends, straight, or somewhat falcate, leathery; and on very short foot-stalks; from five to nine inehes long, and from three-quarters of an inch to one inch broad, with an acute rib on the under side, but hardly prominent, and somewhat keeled above, and of a bright shining greell on the upper surface. Brauches long and smooth; buds small, ovate, and eovered with seales; foot-stalks axillary, solitary, and about one ineh long, furnished on the top with from one to three flowers; receptacle turban-shaped, obliquely truneated on the ends, fleshy; of a dark violet colour, and containing one, but sometimes two secds. Fruit elliptic, or somewhat globular, covered when ripe with a glaueons bloom.

A tall tree, growing from eighty to a limatred feet high,
with a staaioht stem, covered with a reddish-brown bark, slightly winkled, and found in the inost elevated forests in the Moluceas, and New Ciumea.
 Poducarpus.
Syn. Purdiema, Mort., not Muoler:
Leaves somewhat faleate, vory long, and taperines to the point, leathery, stiff, of a pate green, and shining on the upper surface; from thee to five incles lome and rery ravely more than half an ineh broad. Nate catkins axillary nolitary, eylindrical, olstuse, a little incurven, and three-quarters of an inch long, with angular font-stalk- ; fors-atilli- of the frut, from threcquaters of an inch to one inch hace, mel much thicker than that of the receptacle. which is two-loherl, but only one-fruited. Fruit ublong, or ghobular, smonth, and fumished with a shortish point on the apex.

A small tree, found on the mountains of Colombia, and in the North-western part of South Ainerica.

It is very temeder.

Leaves long, lanceolate, acute-pointnl, and tapering to the base; from two to three inches long, ame from thre to six lines. broad in the widest part. Male flower axillary, clongated, and solitary; fuot-stalks of the fruit slemder, with the upper part two-flowered, but only one-fruited, the other heing always abortive. Fruit smouth.

A tree, from twenty to thirty feet high, found on the momatans of Brazil, hy Sellow, but nut hardy:
No. t1. Puducarpus spixutata, li. Bioren, the Spiny-leaved Poducarpus.
Syn. Podocarpus exeelsa, Iordediyn.
" " pungens, Doll.
" Taxus spinulosa, 亻゙mith.
Leaves alternate, or alposite, or in whorls, lincar-fallaite.
leathery, spreading in all directions, pungent, smooth, and thick, from one to one inch and three-quarters long, and one line broad, tapering to a very sharp point, thickened on the edges, and with an clevated rib along the middle. Branches slender and spreading. Male flowers in clusters, and axillary: Fruit on axillary foot-stalks, much longer than those of the receptacles, which are somewhat club-shaped, and onc-firuited. Seed globular, solitary, and about as large as a pea.

A trec, found growing about Port Jackson, and in the eastern part of New Holland.

It is not hardy.
No. 42. Podocahpus Sprulei, Purlatoic, Spruce's Podoearpus.
Leaves thickly crowded along the branches, ereetly-spreading, linear-lanecolate, acute, and somewhat spiny-pointed, leathery in texture, tapering to a short petiole, somewhat twisted at the basc, very slightly revolute on the margins, and marked along the upper surface by the sunken mid-rib, and from one to two inehes long, and two lines wide. Fruit small, solitary, and globular.

A tree, found on the Andcs of Peru, of whiel little at present is known.

No. 43. Podocarpus Tersmani, Miquel, Teysmann's Podoear'pus.

Leaves scattered or subverticillate, broadly-laneeolate, leathery in texture, straight or somewhat falcate, tapering to the foot-stalk, and somewhat twisted at the base, with the midrib on the reper side very prominent, and on the under one but slightly so, and from four to five inches long, and threefourths of an inch broad. Fruit mankown.

A kind found along the sea-shore, in the western part of Sumatra, and on Mount Poe, and at the base of the mountains of Gunang and Mattang, near Sarawak in the Island of Borneo.

No. 44. Podocarpus themtitheola, Blume, the Thevetialeaved Porlocarpus.

Leaves linear-linceolate, or sometines spoon-slaped on the shorter bramehlets, very straight, without foot-stalks, acute or obtuse pointerl, tapering to the base, and frequently a little twisted, from one and a half in three inches long, and from a quarter to half an ineh broad, leathery, flat, concolor, and shining, with a prominent rib, on the under side, a little elevated alsu on the upper une. Banches strurgring, mostly forked, the younger ones angled, and chamelled along the surface; peduncles axillary, filiform, and solitary, from theee to fout lines long, with a turban-shapeed receptacle, oblipnely truncated, furrowed on the back, fleshy, and of a dark-green colour, double the size of the seed, which is a hout half an inch longe, and elliptic.

A very branching tree, errowing from furty to fifty feet ligh, found amongst the rocks, along the coast of New Guinea, and probably on other islauds in the south Pacific.

It is very temder.
No. ti. Ponochmpus Thumberan, Hoolir; Thunherg's Poducarpus.

Syn. Taxus latifulia, Thumbery.<br>Porlompros latifolia, le. Limen.

Leares oblong-lanceolate, stmight, or very slightly faleate, olstnse at the extremities, or with a dry, blunt point at the apex, and regulacly attemating into a very short fout-stalk at the hase, one-newerl, the same enlum on both sides, and of a leathery texture; from one and a half to two inches and a half long, and half an inch broad, sometimes a we or blunt-pointerl; perluncles axillary, solitary, one-flowered, from two to three lines long, and about the same leugth as the reeeptacle; receptirele thick, amgulat, bidented on the top, and containing a single seed. S'eeds elliptic, or frecquently nearly round, with a little curved point on the top.

A large evergreen tree, found at the Cape of Gond Hope, where the colonists call it "Cicellont" (yellow woorl).

It is not hardy:

## No. te. Podncarples Totara, 1)on, the Totarra Pine.

> Syn. Podocarpus pungens, Tran Houtle. " Dacrydium spicatmm, Horl. $"$ Podocarpus spinulosa, Maloy. $"$ $"$

Leaves spreading in all directions, alternate, distant, linearlanceolate, pungent, rigid, and very sharp-pointed, slightly tapering to the base, of a yellowish-green colour on the upper surface, very pale, and glaucous below, with a single nerve, very little projecting along the middle, and slightly bent round the inargins, from threc-epuarters to one inch and a lalf long, and about one line broad. Branches slender, rounded, and long ; brunchlets forked, but sometimes in threes, twiggy, rombled, and of a pale yellowish-green colomr; male and female on separate plants; male flowers solitary, axillary, without foot-stalks, cylindrieal, and longer than the leaves; female ones on solitary foot-stalks, with one or two flowers on each, axillary, and hardly one line long, thickening into a very ample, fleshy receptacle. Seeds, when young, oblong; when mature, oval, and solitary, very rarely in twos on the same foot-stalk.

A tall trec, growing from cighty to ninety feet high, and twenty fect in circumference, found on tho northern island of New Zealand, where it is called "Totarma" by the natives.

This is one of the best timber trees in New Zcaland, growing sometimes 120 feet high. Its timber is in great repute among the colonists for its durability and freerlom from the ravages of insects.
 FRITTED PODOC:ARPI'
Flourere, in spikes, provided with bracts, and frequently all abortive exeept the upper ones.

Flestey ieseptacle, wanting.
Lectere, alternate, or more freguently in two rows, linear, and me-nerverl.
All trees or bushes, natives of the C'ape of Gond Hope, New Zealand, and the temprate part of South America.

No. 47. Podonilipts Aipisi, Mobler, the Appine Polocarpus.
Leapes thickly mattered, or some what two-w wed, along the limanches, linear, obtuse, with a small spine at the apere, ctraight, or slightly falcate, and flat, with a slight furme along the middle, and deep green above, pale green with a prominent rib on the under side, decurrent, and somewhat twisted at the hase, and from three to finur lines longe, and nearly one line hroad. Brauches longe, slemeder, and very spreading. Branchlets rery slender, and of varinus lenethe, mostly in distinct whork, and hright green. Male catkins, solitary, or in fascicles, cylinctrical, sessile, and one-thiml of an inch long. Fruit small, with a tle-hy peduncle, unerqual sided, oblique, and lifid ut the top.

A spreading hush, from ten to twelse feet hight, found on the Alpine momatains, in the somtl-eastern part of New Holland, and on Mount Wellington, aml the elevated plains of Marborourl in Thamania, at an clevation of from : 0 ono to 4000 feet.

So. 4s. Ponocanpers Asmina, Puprit, the Andes Podocarpus, © n Plum Fir.
Syi. Podoearpus spienta, Pippliig, not Bionem.
.. Taxus spieata, Dombley.

- Prumnopity = elecgans, Plilippi.

Leaves regularly linear, tapering to both ends, and either thickly scattered or two-rowed along the branchlets, those on
the lower parts being seattered, while those on the upper ones are mostly in two rows, with rery slort foot-stalks, and from three-quarter's to one inch and a half long, and about ono line broarl, of a dark glossy green colour above, more or less rusty on the edges, without any rib, and glaucous below, leathery, stiff, very smootls, and dense. Branches numerous, and erectly spreading ; branchlets short, stout, spreading, and scattered, but frequently alternate and angular near the top. Flower-spike axillary and alternate ; peduncle two or three-flowered, but one-fruited from abortion; bracts small and sessile; receptacle oval, on the end of a long neck, ohscurely three-lobed, and oblique, smooth, plump, purple, and persistent after the fruit is ripe. Fruit globular, smooth, fleslyy, succulent, without any foot-stalk, dark purple, and about the size of a common cherry. Seeds with a hard, bony shell.

An evergreen pyramidal tree, from forty to fifty feet high, with a cylindrical stem, covered with a smooth reddish-brown bark, found in the shaded valleys of Quillai Leuvu in the neighbourhood of Antuco, and on the colder Alpine regions of South Chili. Professor Philippi clescribes it as a rather large tree inhabiting the inner Andes of the province of Colchagua, and the banks of the River Traijuen in the Province of Valdivia, in the extreme south of Chili. The native name of the tree is "Lleuque," and the drupes or plums are eaten when ripe as woll as the kernels they contain.

Timber hard, yellow, and beautifully reined, and in much request among the eabinet-makers in Chili.

It is quite liardy.

No. 49. Podocarpus fermeginfa, Don, the Rusty-coloured Podocarpus.

Leaves in two rows, narrow, linear, somewhat falcate, very dense, and acute-pointed, from three-quarters to one inch and a quarter long, and one line broad; those on the branches and
larger branchets are needle or' awl-shaped, orseale-formel, and disponed all round, somewhat depressed, and, like the others, of a brownish tint. Rib very prominent on the mper part, but very slightly so on the under one, and of a rusty-brown colour, tapering to a fine acute point, sometimes, hut rery rarely, to an obtuse one. Branches spreading, frequently alternate, lateral ones and branchlets two-rowerl, slender, sprealing, horizontal, or bent downwards, and covered with a reddish-brown bark. Male catkins eylindrical, or oblong, axillary, and solitary; female flower-spites one-flowered, axillary, or creet on the ends of the branchlets, with numerous bracteas. Fruit oval or globular, about the size of a ha\%l-mut, soft, and of a fine red colour, and when ripe cowered with a glaucous powder, and with the odour of turpentine.

A tree from forty to sixty feet high, and three feet in dianeter, found on the nomethern island of New Zealand, where it is ealled Miro, or Mairo, by the New Zcalanders. Timber durable, and of a fine red tint.

It is not hardy:
No. j0. Poducirpe's Lammeacii, Muolier, Lawrence's Podocarpus
Syn. Podocarpus Alpina Lawrencii, Puilatore.
Leares somewhat in two rows, spreading, linear, narrow, and tapering to both ends, of a pale-green colour ahove, glancous below, and furnished with a very sharp, rigid point. Branches slender: Flowers and fruit unknown.

A small tree, fouml ly Cimn, in Tasmania, of which little further is known.

Ň. st. P'unocinpt's Nivalis, Hookic; the Snowy Podocarpus.
Leaves ollong, or elliptie, obtuse, recurved, and spreading, taj cring to the hase and ipex, very clocely placed, thick on the cleses, sescile, or on wery shent fout-stalks, and with a single nerve along the midule of the lafl, scarcely visible or almost A A
wanting on the upper surface, but rather projecting on the under one; from three to four lines long, and from one to one line and a hale broad in the widest part. Male flowers small, eylindrical, obtuse, and united in threes on the top of the axillary peduncle. Fruit mknown.

A very sunall bush, found near the limits of perpetual snow, on the mountain of Tongariro, in the northern part of New Zealind.

It is not yet introduced.
No. 52. Podocanpes spmesta, IS. Brozen, the Spike-flowered Pudocarpus.

> | Syn. Dacrgdium Mai, Cumningham. |
| :--- |
| $"$ |
| $"$ |
| $"$ |

Leaves mostly in tro rows, but sometimes those on the larger bramehes are alternate and seattered; from a quarter to one inels and a quarter long, and one line broad, needle-shaped, imbrieated, placed all round, and glacous below, while those on the small lateral ones and hranchlets are regulinly linear, acutepointed, mostly faleate, and of a dull green, or reddish-brown on the upper surfiee, and with two glancous bands below, recurved at the edges, oblique at the base, rounded at the ends, sometimes spoon-shaped, and furnished with a very fine and short muero, and placed on very short slender foot-stalks. Branches and branchlets numerous, flexuose, aseending, or spreading horizontal, or sometimes deflected, and covered with a reddish bark. Male eatkins from ten to tweaty in number, sessile, and disposed in creet axillary spikes, those of the female ones in loose, many-fruited spikes. Fruit globular, nearly sessile, and from four to seven on enel spike.

An enormous tree, growing from 150 to 200 feet high, with a straight stem, found growing in swampy placess on the Northern Istand of New Zanland, where the natives call it "Mai."

It is quite tender:
 Porloc:urpus.
Syn. Taxus montana, Willdenore not Jilltull.
, Perlocarpus montana, Lorldiges. Humbliti, Hoil.
" Torreya Ifumbolrti, finight.
" Dacrydium distichum, Jom.
Leaves somewhat in two rows, or scattered, broadly linear, frequently inore or less sickle shaped, bluntly romded at the ends, ravely pointed, but mostly furnithed with a vory short umero, entire, leathery, smooth, flat, or a little conves, of a hright glossy green above, and much paler l clow; from half an inch to an inch lone, and one line and a half broad, with a slight rib along the upper surface, but hardly visilile on the under one except by its colour. Branches ascending or spreading, but sometimes, on old trees, drooping. Branchlets in two rows, and altermate. Flower apikes l,manching, axillary; amb terminating in two or three fluwers, but abortive, and only one-fruited. Sireds orate, or glohular.

A tree ahont sixty feet high, with is spreading head, fomme on the mountains of Saragna, in Pern, and hetwem Ona and Loxa, at an chevation of from grone to stou feet.

There is the following variety:-
 Syn. Taxus montana, Vor: Willdronne:
Leaves much denser, and mot more than lalf the length of thase of the species, lut in other respects the same.

It is found on the mountains of Quindin, between Moral and Pascondel-Machin, in Peru, at an elevation of from cono to soroo feet.

## Section III. DACRYCARPUS. Findlicher, or the Dacry-dium-freited Podorarps.

Flowers solitary and terminal.
Receptecle fleshy with the axis of the short spike, without bracts.

Lerness many-formed, cither three-sided, needle-shaped, and in five rows, or in two rows, spreading, linens; and flat.

Large trees, natives of dava and New Zoaland.
No. Ef. Ponomapus curnessind, la. Brorem, the Cypress-like Podocarjus.

> Syn. Podocarpus im!ricata, Blume. Horsfichdii, Hrellich.
> ," 'Taxodium Horsfieldii, Ǩnight.
> , Clyptostrobus Horsficldii, Trnight.

Leaves opposite, linear-faleate, and spreading, in two rows on the lesser branchlets, but arranged in five rows, loosely imbricated, needle-shaped, three-sidel or awl-shaped, acnte, and spiny-pointed on the principal and lateral branches; from three to cight !ines long, and from one half to three-quarters of a line broad, of a bright glossy green colour on both faces, very slender, soft, slightly concave, tapering to each end, but least to the base, and very acute at the point on the adult ones. Branches sleader, reflected, or pendent, but sometimes with the upper ones ascending, regularly divided, very mmerous, and covered with seale-formed leares of rarious Iengths, closely adhering at the base; lateral ones much divided, very slender, alternate, in two rows, and more or less distant. Branchlets very short, slender, two-rowed, and thickly covered with spreading leaves, until they almost touch cach other: Fruit solitary, terminal, on short pendent branchlets, surrounded by leaves, a little longer, and more spreading than the others. lieceptacle fleshy, almost the length of the fruit, aud a little thickened.

A fine tall tree, growing 180 feet high, well fumished with spreading branches, clothed with vivid green foliage, formed in Java where it is called "(homoro"), and in the Pulo-Penang, and the Philippine Islauds, where the natives call it "Kimerak" and "Kiputric." It constitutes one of the best imber trees on the island of Java.

##  сагрия.

Leares on the youns liranchlets in (worn rows, linear lanceolate, faleate, somewhat four-nildel, mucromate, spreading, and from a quarter to one-third of an inch longe, and half a line broad, while those on the adult pats are linear-subulate, decurrent at the lase. and shorter and flatter. Fruit solitary, ovate-globose, pale yellow; shimins, mucronate at the apex, and two lines long, and about the same broal. Receptacle broader and longer, and sessile.
A tree very full of branches and 'mowhed hranchlets, found in the Philippints Lslands by ('manine, and of wheh but little is known.
 like Podocarpus.
Syn. Dacrydimm thuicider, silandor:
excelsum, Don.
ferrusinemon, Pim Moutte.
Podocarpus thuioides, $I$. Brourn.
Leaves generally awl-shaped, decurent, spiny-pointed, ofter lonsely imbricated, and from one to two lines long; those on the larger branches and lateral nnes seale-formed, scattered all round, adhering at the hase, more or less spreading, and rery acute-pointerl, while thome on the hranchlets are flat, horizontal, linear, curved backwards, siekle-shaped, and elosely placed in two rows; from two to three lines long, and a bout one-thind of a line broad, and all more ni lese of a 14 sty-hrown or copper-
colour, somewhat glaueous when young. Branches spreading, or loent downwards, rarely aseending, very slender, long, and scattered at irregular distances along the stem; lateral ones rounded, spreading, or drooping, frequently abortive, but proclucing mumerous slort rarnules, full of leaves, whiel sometimes are so plentiful as to entirely hide the branehes, while at other times they are rery distant. Female flowers solitary, terminal, and without, or on very short, fout-stalks. Reeeptaele fleshy, cennected at the base, and open only on the top, which is ob)tuse. Fruit inversely egrg-shaped, almost druprecous, about the size of a pea, and furnished on the apex with a little flexible point.

A large tree, growing 200 feet high in swampy places, with a grrayish-white bark; found on the Northeru Island of New Zealand.

The aborigines of New Zealand call this tree "Taki-Kiater" (Water-pine), on account of the tree only growing in marshy places, or probably fron its large and soft white timber being prinejpally used by them in making canoes of large dimensions.

The colonists eall it "White Wood," and cat its little succulent fruit, which is sweetish, and produced in great aboudance.

It is quite teuder.
No. 37. Podochmpus usta, Brongniert, the whitened Podoearpus.

## Syn. Daerydium ustum, Vicillard.

Leares in altermate pairs, seale-formed, acute-pointed, decurrent at the base, and somewhat remotely placed, and always imbricated on the young fastigiate bramehlets. Branelies and brauchlets short, divaricate, and somewhat four-sided by the imbrieated, small, scale-formed leaves. Male eatkins axillary on the erect branehlets, solitary, and oblong-eylindrieal. Fruit globose, sessile, and about one line long.

A diffuse shruh, with numerous divaricate branehlets, a little tortuose, found in the mountain woods of Puila and Diane in New C'aledonia.

## UNCERTATN AND LITTLE KNUNV KINDS.

 leaveif Pudocarpus.

Syn, Dacrydium chatum tonuifolimn, C'urvëre.
" " temifolium, Pertitorr.
Leares on the youme hamehleis alternate, very slender, linear-fileate, compressed, closely placed in two rows, and nearly half an inch long and half a line broad, white those on the adult part; are linear-subulatr, and convexly-keeled on the baek; all of then are decurrent at the base, and mueronate at the aper.

A tree with crect, eursed hranches, and shemder lyanchlets; found on the wooded monntans in New Caledonia.

No. 59. Podocabpus V'ienladinh, I'mlaloie, Vicillard's Podoc:arpus.

Syin. Dacrydium elatem eanpmeta, C'uraitre.

> Vicillardii, Perlature.

Leares on the young shonts sattered, or sometrhat iworowed, spreading, glauceseent, and from a quarter to half an inch long, and very narrow; while those on the adult parts are seattered, adpressed, and couvexly-keeled on the back; all of then are decurrent at the lase, and muromately-subulate at the apex. Male catkins solitary, crect, linear, and terminal, and from n ypuarter to half an inch long. Fruit unknown.

A tree found growing among the rocke, along the banks of running streams at Poila, in New C'aledonia.

Gen. PSEUDO-LARIX. Gordon. The False or Chinese Larch.

Flower's monceeious, or male and female separate, but on the same plant.

Cones oblung, pendent, inittle, and, like the head of the common Artichoke, covered with divergent seales.

Sectes very deciduous, extended at the points, heart-shaped at the base, and enelosing at the buttom two soft-coated seeds.

Seeds irregularly shaped, with it soft, thin, whitish, skin-like eovering, more or less enelosed by the wing, but free, and furl of turpentine.

Wings oval-lanecolate on the outer side, but quite straight on the inner one, and entirely covering the inner face of the scale.

Leures deciduous, soft, linear, flat, and collected in bundles on the adult plants, but seattered singly along the young shoots, and very long on the young plants.

Sech-leares from five to seren in number.
Name derived from "Pscudo," false, and " larix," the Larclthe false or Chinese Larch.

A noble hardy tree, found by Mr. Fortunc in the Central and North-cast provinces of China, and very distinet from the Furopean Larches, in the cones having deciduous scales, with divergent points.

Pseudo-Lalid Kampfert, Goicton, the Golden or' Chinese Larch.

> Syn. Larix Kiempferi, Fortune.
> " Abies Kimpferi, Lindley.
> " Pinus Kiompfori, Lambert.

Leaves in bundles on the adult branches, and singly on the leading shoots and young plants, very slim, linear-lanecolate, tapering to the point, and quite deciduous; fiom one inch and a half to two inches and a half long, and rather more than one
lina broal, of a bautiful light grean when youg, but bafore falling off in the autrman, of a fine grolden yellow. Branches exaetly similar to those of the emmon Lirel. Cones pendulous, three incles long, and two inches and a half wide near the biac, conical, with d eidunus scales, cliverging out at the points like those on the head of the esonmosi Artichoke, and very brittle when youns, exessively de-idusus when ripe, falling asmmer from the least presisure, hat athering very loosely in bunches by long woody threads, one of which panes out of the hase of caeh scale ts the axis of the cone, round whieh the seales migimally grew: Seales heart-shaped, that, woody, entire on the margins, tapering gradually to ant obtnse point, and rather more than an inch lome with a very small sharp-pointer hract at the have of each seale on the unter side, keeled on the back. Seeds in twos at the base of each scale, rather irregularly maped, with it soft membranaceons covering, of a whitioh colour, full of turpentine, aml enveloped on tho outer side liy the winge. Wings more than an inch long, broadest at the hase, regnlarly tapering to a rounded point, and of a glosey light brown colemr:

A splendid tree, from 120) to 1:30 feet hish, with a pryamidal head, found by Fortune in the Northern, Fastem, and Central provinces of China.

The (hinese call thi tree " kiara-mats" (Pine full of buds), and "Kin-le-sump" (common grolden line ; and the Japanese, "Finsi," or "Fu-ji" (buds crowned with leaves), and "Seosamats: "(deciduons ľir).

It is quite hardy:

## Gen. RETINOSPORA.* Sicbold.

Flower's monceeious, or male and female on the same plant, but separate, and terminal, the males cylindrical, females solitary, very small, and on the same branchlets as the males.

Cones very small, globular, ligneous, and solitary:
Scales ovate, in alternate cross pairs, ten or twelve in number, wedge-shaped at the base, peltated on thie top, and woody.

Secels in chamels, coated with resin, and two at the base of each seale, with lateral membramaceous wing, marked with resinous bands.

Leaves persistent, in threes, or opposite pairs, linear, or scale-formed, and mostly spreading.

Seed-leares in twos.
Name derived from " rhetine," resin, and "spore," sced,--the sceds being eoated with resin.

All evergreen trees or shrubs, natives of Japan.
No. 1. Retisospora Efiwhagrind, Bariay, the Aineriean Tom Thumb, Arbor Vitas.
Syn. Thujar Occidentalis cricoides, Jlor\%

$$
\begin{aligned}
& \text { " } " \text { Elwaugeriana, Hort. } \\
& \text { " } " \text { hybrida, Hort. }
\end{aligned}
$$

The leaves on this plant are of two kinds; the primordial ones being linear, aeute, rather distant, spreading, somewhat decussate, and from two to three lines long, while those on the more mature parts are small, seale-formed, very aeute, and elosely imbrieated in four rows, with mostly a transparent gland on the baek, and of a bright green colour. Branehes numerous and ereetly spreading. Branchlets very numerous, slender, and either open and heath-like, or flat and closely imbricated like an Arbor Vitae.

[^8]This kind forms a very neat，dwarf，dense，round bush，and is said to be a hybrid production，ridised in Ameriea，but in all probability a Japanese plant．
 husnuia．
 Wiulrinstonia eric ille，に゙ルight． （．unnessus cricuidee，ilom\％ Juniperus exicoiles，Hurt．
Leares in threes，but smactimes in opposite pairs，spreal nut or bent downwards，linear，flat，a guatrer of an ineh long，fre－ quently slightly e mives；markel on the under side with two little glancous banls，and tajerins trgularly to the point，de－ current at the hase，and mueronat：

This kind furns at regular，conieal，compact，pyramidnal bush， from four to six feet high，with mumerous horizontal branchlets． which are very slender and compact．It is cultivated by the Japanese in pots，umber the name of＂Nezu＂（dwarf），and the whole plant turns to a deep，phrpli h－lyewn colvur in winter：

It is tolerably harly：
No．：3．Reminusporid Fllidumis，Teitele，the Fem－like Japan

Syn．Retinu－purat obtasa filicoides．IIort．
Leaves small，oval，curvel，thick in texture，and somewhat obtusely－pointed，liceled on the back，thickly and rather loosely imbricated in four rows，and of a doep erlessy green colonr． Branches lones，narrow，that and remblanly and thickly furnished， on both sides，with very short，ennpound branchlets，of the satue si／e atom their whole length．Hranchlets very short， flumdrangular，and of a deep green colour on the mper surface， turt more or less filucous boneath．

A handsume frec－growing tree，resembling Retinospora ob－ tir－，found in the Japmese grarlens near Yeddo in Japan．

It is quite hardy，and probably only a fine variety of Reti－ nospora coltusi．

## No.4. Refinospora filipsird, Stanctish, the Thread-branehletted Japan Cypress.

Leaves ovate, very acute, and spiny-pointed, loosely imbrieated, open and spreading at the points, keeled on the back, decurrent at the base, and of a bright green colour; more or less glatueous beneath. Branches open and spreading, with the secondary ones alternate, long, somewhat distant, and furnisher principally on one side with nuncerous branchlets of rarious lengths; the terminal bunchlets are long, slender, undivided, filiform, and freçuently cight or ton inches lung, with tufts of small spray at their points; while the lateral ones are rather short, somewhat flattened, and bright green on the upper side, and more or less glaucous on the under one.

This kind forms a beautiful tree, fifty feet high, pyranidal in outline, and peculiarly graceful on account of its drooping branches and long pendulous spray:

It is a native of Japan, and is much planted in the gardens about Yeddo, on account of its very elegant appearance.

It is quite hardy:
No. 5. Retinospora juxiplizomes, C'arière, the Juniper-like Retinosporal.
Syn. Retinospora dubia, Mellivy.
" decussata, Ilort.
" Chamacyparis decussata, Ilort.
" Thuja cricoides, Mort.

Leaves heath-like, erectly-spreading, distantly decussate, acute pointed, flat on the upper side, slightly rounded on the back, of a light glancous green in summer, changing to a purplish-brown in winter, and from two to four lines long. Branehes erectly-spreading, much divided and compact. Branchlets slender; flexible, more or less crect, dense, and very numerous.

A small, dense, and very compact pyraunidal bush, seldom growing more than three or four fect ligh, and of a fine glaucous green in summer, but changing to a violet or
purplish-brown in winter, and quite distinet from Retinospora ericoides.

It is a native of Japan, and hardy:

No. (j. Remtionpori meptortad.a, Zucrerimi, the Slender of Flat-beanchletted Retino-pora.

 " :" Andelyellois, Hurt.
Leaves of two kink, the primordial ones being in whorls of three, spreading, and curved more or less backwards; lincar, Hat on the upper surfice, and awl-shaped at the points; thiekly placed soanwhat spirally all romd the shoots, one fourth of an inell long, hricht ofreen above, and furnished with two glaucons white hands on the unler side, which separate the thickened margins and green midr-rib. The foliage on the mature two-dged branchlets of adult plants are small sealeformed budice, chosely intricated in four rows, in opposite bairs, the marginal ones being keeled on the baek, overlapping on buth sides, mucronate, and sometimes a little inenred, and more or lest extembed at the points, while those along the contre, on the upper aml lower sides of the branchlets, are flatly placed in straight rows, of an owate-rhomboid figure, and glosyy-green towatels the peints, with a thansparent gland on the haek, and two glancous white marginal bands, which only extemel aloner the lower half of the leaf, and are partially covered by the point and sides of the hinder leaves. Branches thickly placed along the stmm, speeding ame horizontal, lateral ones compact, very dense, more or less irregularly clustered towards the points of the buanches, and eomposed of slender; closely imbrieated, two-edged, strap-shaped branehlets, little firked, but thickly placed laterally on the fin-shaped spray, in irregnlarly arrangel cluster:, especially towards the outer parts of the principal branches. Cones globular, solitary, ahout the size of a pea, and terminal on the points of the pre-
eeding year's branches. Seeds in twos at the base of eaell scale, with lateral membranaccous wings.

This kind forms a dense compact pyramidal evergreen bush, growing from three to six feet high, furnished with short branehes down to the ground, and thickly covered with numerous horizontal branchlets and small spray, closely covered with imbrieated, more or less glancous foliage, which gives the plant quite a silvery-gray appearance.

It is a native of the mountains of Japna, and is much cultivated in the Japanese gavilens about Yeddo, where it is called "Nezu" (dwarf), on account of its low, compact, pyramidal appearance.

A very desirable plant for small gardens, as it is quite hardy.

No. 7. Retinospoind lycopodroides, Stancish, the Clubmosslike lietinospora.

Syn. Retinospora monstrosa, Mort.
Leaves variously shaped, and lensely arranged all round the shoots, those on the upper parts of the principal branchlets being more or less terete-pointed, or bluntly awl-shaped, or slightly flattened on the sides, keeled on the baeck, and densely arranged more or less spirally all round the branchlets, while those near the base of the principal shoots, and on the lesser spray, are more or less seale-formed, adpressed in opposite pairs, keeled on the back, oval-shaped, closely imbricated, and all of a deep glossy green colour. Branches spreading, and rather slender, with the branchlets and lesser spray seattered irregularly all round, and very dense, especially towards the ends of the branches. Branchlets numerous, short, linear, and thiekly placed irregnlarly along the sides of the lateral branches, with the learling ones frequently confused, and ending in a flattened kind of monstrosity, more or less contorted near the points, and densely covered with small pointed sealelike leares, sometimes more or less glaucous on the mnder side.

A fine evergreen tree, resembling Retinorporat obtusa, found in the gardens near leddo, in Japan.

It was first imported by Mr. Standish, of the Royal Nursary, near Biarshot, in the early part of 1861 , through the raluable exertions of his friend, Ifr: Rubert Fortu ie.
 Cloress.
Syn. Chamereyparis olitus?, Dimellicher. Chamapence obtusal, Zurctrini. Retinospora Fusinoki, Zuccurini.

Leqves mowtly in whorls of four, oraterhomberl, blunt, seldom $p$, inted, decussate, all seale-finmed, elosely 1 ,"essed ulong the branchlets, and a lhering ahost as far as the point: the lower part only being riville; those along the upper and under rows are oraterhemboid, obtuse, aid sehem acute, while the sidu ur lateral ones ate kented, and lap over at the utlges, are sontewhat pointerl, aml almost sickle-shaped; those on the younrer plants are now open, lonser, and remain on fur several years. Branclus spreding, lateral mes in two rows, rery delne, spreadines unt liko a foth, athe of a licht shining gren colour. ('uncs ablitary on the cmis of the hranchlets, glubular, about the sizo of a smal! arape, with eight or ten seales, in alturnate opponite pairs. Scates welde-shaped at the base, widest at the aper, with a phan surface, seldom Wrimkled, and of arich trom foluill, with two short-winged speds at the hase of each sale.

A tall evergreen tree, growing from serenty to one hundred feet high, and from thre: to tive feet in dianeter, with an crect straight stew.

It constitutes a large portion of the forents in the mountains on the Island of Nippon, in Japan. Its timber is white, finegraiued, compact, and aequires, when worken, the brilliancy of silk; and in emsequence of its vahuble properties, the Jipanese dediento it to the God of the Sun, and construct
chapels and small temples out of its timber, for divine purposes.

This beantiful tree is called "Hen-lak" by the Chinese, and "Fu-si-no-ki" (tree of the Sun) by the Japanese, and is the glory of Eastern forests. There are the following varicties, viz. :-

Retinospona obtus a aurea, Fortume, the Golden Variegatod Japan Cypress.
This variety dificers from the ordinary form of the tree in having a portion of the smaller spray and leaves of a golden colom, intermixed with the ustar glossy-green ones, all over the plant.

A nice variegated variety, found by Mr. Fortune, cultivated in the Japanese gardens about Yeddo, in Japan, where it is ealled "Kwa-furi-hak" (variegated tree of life). It has been introduced by Mr. Standish, of the Royal Nursery, Bagshot, along with the following varicty.

Retinospona obtusa angentea, Fortune, the Silver Taricgated Japan Cypress.
This variety has a portion of its leaves and lesser branchlets of a silvery white, intermixed throughout the branches. It is much cultivated in the grardens about Yeddo, and other parts of the Island of Nippon, in Japan.

Retinospora obtusa conpacta, Horl, the compract Japan Cypress.
The leaves and branchlets of this variety resemble those of the species in every way, except that they are much smaller, and the plant has a very dense and compact habit.

Rethospoha obtesa Ketereehi, Stunctish, Ketelecr's Varicgated Japan Cypress.
This variety resembles the species in every respect, except that about half the branchlets are of a yellow colonr; and, when in proper condition, furms ar very striking olject.

Retinosfora obtesa premei, fromalun, the Pigmy Japan Cypress.
Syn. Thuja pygmea, Vritd.
, Retinospora obtusa nana, How\%.
This very singrular variety forms a dwarf, cushion-shaped, little bush, which sellom grows more than a font or two high, but spreads ont in a horizontal direction all round, to more than double that distance, and furms a large, dense, flat tuft of wlosey-green spmay when old, with brathehlets and leaves exactly like those of the specters.

A very curious miniature evergrech luall, much cultivated in the Japmese gantens about Vidu, wn account of its very Wwarf habit, dense, complact appenmmee, and glosey deep green colour. It is ruite hardy, und tiorns an interesting olject for rock-work (ir miniature garlets.

> Nu. 9. Retinospori pisicime, Nïlbull, the Pea-fruited lictinospora.

Syn. Chamiteyparis pisifera, Eindliellei.
Leaves in fonr rows, decussate, all scalc-formed on the adult plants, and remaining on the plant fur five years, those growing over the axis of the lnanchlets almont admate even to the apex, but thene on the sides alliere moly by the lower face; the upper and lower ones are ovate-lancolate, tapering to a hard point, keeled on the lack, and smenoth, the lateral ones compresied at the eddres on both sides, ahmust sickle-shaped, "qually long, acute-pointed, and markel on the under side with two white glancous band. Branches numerons, thickly covered with lramehlets, the latema ones in two rows, and wery thickly envered with laves; male and female flowers on the same plant; the male cathins terminal on the upper tranchlets, eylindrical, oltuse, and munerous; female ones tominal in the same manner as the males. Cones orateghlume, about the size of a large pea, and compoed of ten or twher scales in 1ftate cress [airs, regularly imbricater? Suales ovaterhmmbid, it litth puinterl, clemulate, wedgeB B
shaped, and resinons at the base, attenuated, and spread out horizontal at the apex, clilated, raised in the centre, woody, and of a yellowish-brown colour; with a smooth surface. Seceds in twos at the have of each seale, with large membranaccons hrownish wing firequently much broader than the seecls.

A much smaller tree, and slenderer than Retinospora obtusa, with its stem much less elerated, and darker-coloured bark, fonnd on the momenains of Yokohma and Karagan, in the Island of Niplion, in Japan, where it is called "Sawara."

No. 10. Rethospori plumosi, Ilumt, the Plume-like Japan Cypress.
Syı. Retinospora pisifera plamosa, Ifort.
Leaves small, awl-shaped, stiff, erectly spreading, in opposite cross pairs, very acute and spiny pointed, coneave and glaucous on the mpper smfface, rounded and deep green on the back, decmrent and glancous at the base, and alpout one line long. Branches mmerous, erectly spreading, and thickly furnished with branchlets. Branchlets slender, very numerous, short, dense, compact, and thickly cluthed with small, acnte leares, more or less glaucous when yomg.

A very dense, erect, and elegant shrub or small trec, with a phome-like appearance, found in the neighbourhood of Yeldo, in Japan, where it is much cultivated by the Japanese in their gardens.

It is quite hardy, and has the following varictics.

## Retinospora plumos aterea, Iont., the Gulelen Plume-like Japan Cypress.

Syn. Retinospora pisifera aurea, Horl.
This is a very elegant varicty, with all the leading points of the branchlets and lesser spray of a fine golden colour, which they retain all the year romed.

It was found by Mr. Fortune cultivated in the gardens
aburt Yeddo, where it is called Kwa-huh (1h wering tree of lifu) by the Japanese.

Rumengpori plumosa -lrgentea, Ilont, the Silvery Plumelike Japan Cypress.
The points of the young shonts nf this variety are quite white when first they appear, and remain so fro about thee months, When they gradually change to the usual deep green colour of the species.
It is a rery nice and striking raricty:

##  loaved Retinu-poral.

Syin. Chamacyparis stuarvoz, Ebullicher:
" Cippressus squarro-a, Letu*on.
Leares spiaal, or in alternate whorls, spreading, linear, sharp-pointed, decurrent, dense, smooth, and frequently bent. or curved hackwarls, lut mone what seale-formed, and slightly atpressed on the male and cons-bearing brauchlets; those on the young plants are homer r , lin ar, harp-point al, spreading, retlexed, and hright glancons erreen abowe, and fumished with two white ghancous bands on the untersile, and from three to frur lines long, amd half a line broad. Branches slender, and gracefully curverl towads the extremities. Branchlets numerous, spreating in erery direction, and thickly fumished with extended leaves. Male and fomale flowers separate, lout on the same plant. Conmes globmar, solitary, alout the size of it matl pea, and terminal on the emb of the preceding jear's hraches. Seales, ten or twelve in number, in opposite decussate pairs, at first close, afterwards, when mature, irregularly separated, and spread out, wedse-shaped at the hase, extended at the summit, and of a hrown colour, with two seeds at the lase of cach scole, sume mided by it large, membrataceous, brown wins, much bromler than the seets, and irregularly marked with numerou- titte remons banl:

A large bush or sumall tree, inhabiting the Island of Kiusiu, b13 2
in the province of ligho, and the wooled mountains of Yokohama, in Japan. It is also found cultivated in the Japaneso gardens about Yeddo as a bush, fron four to six feet ligh, where they have the fullowing varicty also in cultivation. It is tender; and called "Sinolu-hiba" in Japan.

Rethonpola sequarosa variegata, Siebold.
S'yn. Chamaceyparis squarrosa varicgata, I'mullecher.
This variety differs in laving some of its branchlets and leaves of a white colour, intermised with the ordinary green ones in a variegated mamer.

Gen. SAXE-GOTHTHA. Lindler. Prince Albert's Yew.
Florers moncecious, or male and female separate, but on the same plant; male flowers in spikes, female ones in globular heads.

Fruit composed of several consolidated free seales, formed into a solid fleshy cone.

Seeds a pale brown, glossy, oral mut, with a short, thin, jagged membrane, enveloping the base of the seed only.

Leaves alternate, seattered, or somewhat two-rowed, leathery, and flat.

Named in compliment to his Royal Higlmess Prince Albert.
A large buslı or small tree, found on the mountains of Patigronia.

Saxe-Gothed insspicti, Limelley, the Temarkable SaxeGothion.

> Syn. Taxus Patagonica, /Ifort.

Leaves altemate, and seatered, or somewhat in two rows on the brunchlets, leathery; stiff, linear, or oblong-laneeolate, somewhat sickle-shaped, slightly twisted and reflected, from half to one inch and a lalt long, and from one to two lines broad, slightly convex on the upper surface, and with a tolur
ably elevated ribl, makied on each site with glatucous baads an the under ome, furnshell with it very shore fout-stalk at the base, aml terminating at the summit in an acute proint, sometimes a little romberl. Mate catkins in terminal ppides or racemes; femate flowers in spherieal heals in the form of a litthe cone, on lung, slember, teminal font-atalks, sumetimes droping. Frmit composen of several consolidated free scales, finmed into a solid Heslyy a me, of a depmesel furm, with a very irregniar surtace, wwits th mony of the a fles heing dumtive, while th: ens a the whole retrin their original form, are frec, rather spins ambl comstute su maty tough, sharp tuberche, puinting in ali dimetions. Sowels, a pale brown, fhersy, ovate mut, with a short. thin, jarged memblatane, eureloping the base of the ered only:

A shatl tre or bu-h, arowins thity feet high on the momstains of Patagenia, with very muth the appearance of the comman yew, but wanting its time smbre ofren.

It is called "Maniu" and "Pinu" liy the Chilians, and is more or less temder:

## Gen. 心̇LINBUTRI!. Smitl. The Maiden-hair or (inlson Tree.

 the males in spikes, asillary, anl without feot-stall:s; the females in teminal clunters, on lome petioles.

Fruit dmpaceuns, or covered with a flowhe pulp, and smouth externally, no- lly single from abortion, and enclused at the base in a small fleshy cup.

Solls solitary in each fruit, and covered with it sumuth, hard, bony shell.

Lectees fam-shapert, on lonif fiout-stall:s, loherl, and jagged on the outer margins, and covered on both sides with minute fanshaped, straight nerves.

Scect-leaves in twos.
Named in honour of R. A. Salisbury, F.R.S., an eminent English botinist.

A large deciduous trec, native of China and Japan.
Salisburia adlantrfolia, Simith, the Maiden-hair Tree.

- Syu. Ginkgo biloba, Limncuus.
" Salisburia Ginkgo, Sulisbur'y.

Leaves deciduous, broadly fan-shaped, flat, leathery, thick rounded on the upper margins, and the same colour and texture on both sides, closely clustered on the short spur-like bramehlets, but distant and alternate on the young shoots, fan-like, wedge-shaped at the base, somewhat triangular, and with from two to four lobes, more or less deeply divided, the lobes again irregularly toothed or jagred, and somewhat undulated at the edges, with mumerous minute parallel ribs, elevated on both sides, and tapering to the base, where they are united with the foot-stalk, which is as long as the blade of the leaf, of a fine light or yellowish-green, pliant, smooth, and glossy. Branches alternate, mostly ascending, or horizontal, hut sometimes declining on the lower part of the tree, lateral ones spresuling ; branchlets very short, sp,ur-like, and producing each year a cluster of from three to five leaves on the top of each, very elosely placed, somewhat vertical. The male eatkins appear with the leaves in May, on the wood of the preceding year, or on old spurs, are without foot-stalks, of a yellow colour, and one inch and at half long. The female flowers are produced in (more on less) clusters, on wery long foot-stalks, each in part enclosed in small cups at the base, formed by the enlargement of the peduncle. Fruit gholinlar or ovate, ane inch in diameter, drupaceous, or fleshy outside, on very long, slender foot-stalks, each containing a single bony uut or seed of a whitish colour. Secds somerwhat globular, tnlerably large, covered with it harel, bony shell, smooth externally, ind tapering to both ends, and enveloped in a light green, or yellowish fleshy pulp, covered
with a smooth, glossy, yellowish skin outside. Seed-leares in twos.

A large, deciduous tree, with rather a conical-shaped head, anl straight stem, covered with a grayish, rough lark when old, and with the sexes.on separate trees.

It is foum ahmently in China and Tapan, growing from 80) to 100 feet high and from six to twelve feet in diancter.

Professor Bunge, whu accompmiel the Russian Mission to Pekin, states that he sar, netr a parcola, an immense "Cinkgo," with a trunk nealy 40 fect in circmmerence, and of prodigious height, lat still in perfect virour.

The Japanes: names for this tree are " (inan" (decirluous tree), aud "Fiusi-kin-go" buls crombal with leaves in summer). The Chinese call it "Ginkso" full of leafless luds in winter), in addition to " Ginan," "Quachow," and "Gin-ki-go " (a tree withont leaves in winter:

It is quite hardy, and has the following varieties:-

## SALISBL RAA ADIANTITLLIA MACROPIMILA, Hort.

Syn. Salisluria adiantifulia lacininta, Cumièr.

$$
\begin{aligned}
& \text { "macroplyylla, Ringuins. } \\
& \text { (iinken bilobal laciniata, Ifurt. }
\end{aligned}
$$

This rariety differs from the specier, in its leaves being very much larger, some of them measming tell inches in circumference, and divided in two, t'mee, or five loles-the principal lubes being acrain subdiviled, and molulated, and irrecrularly laciniated, ur dentated on the edges; a very fine variety, of Frenelı origin.

ShisberiA Adhathould thabiata, Cemière.
This variety differs from the ordinary form, by its leaves heing variegated and striped with pale yellow. It is a very nice variety:

## 

This varicty only differs in having the branches pendulous.

## Gen. SCIADOPITYS. Sictold. The Parasol Pine.

Flowers monœcious, or male and female on the same plant, but separate, the male ones terminal, the female solitary, and growing from among the scaly huds.

Cones elliptic or cylindrical, obtuse at the ends, large, and solitary.

Scules persistent, leathery, thin, regulanly imbriuated, wedgeshaped, half-rounded on the upper part, and with a short bractea adhering.

Secels elliptie, compressed, seven under cach scale, with a leathery eovering, tapering into a membranaceous wing, attenuating to the base and apex.

Leaves in whorls like an umbrelli, persistent, without any foot-stalks, linear, flat, and obtuse-pointed.

Nume, derived from 'skidus,' shade, and 'pitys,' pine, the Parasol Pine.

> Sciadopitys Verticiliata, sicbold, the Whorl-lcaved Sciadopitys, or Parasol Fir.

> Syn. Pinus verticillata, Sicbold.
> " Taxus verticillata, Thumerg.

Leaves long, linear, or somewhat faleate, suoutli, entire, alternate, persistent, without any foot-stalks, and tapering to an obtuse point, coneave and ribbed on the under side, in close tufts of from thirty to forty in number on the ends of the shoots in a sort of whorl in the form of an extended parasol, and remaining on the branches for three or four years. Branches alternate, or in whorls, with the young shoot eylindrical, and without leaves, except towards the top, but eovered with persistent scales, which when old fall off, and leave the adult branches marked by their scars; buds terminal, rertically numerous, and sealy, at first imbricated, but afterwards seattered. Male and female flowers on the same plant; the male eatkins terminal, somewhat globular; female, solitary, and growing from
anong the se:ly buls, Cones elliptic, cylindrical, obtuse it the ends, solitary, two inches and at lalf loug, and one inch and a half in diancter, and somewhat resembling those of the Pinus cembra. Scales regularly imbrieated, wedge-shaped, half-rounded on the outer part, leathery, irregularly reflexed round the edges, rather thin, persistent, and of a grayish-brown colour, bracteas adhering to the scale, and shorter. Seeds clliptic, compressed, seven in number moler cach seale near the upere pats, with a coriateous covering, tapering intu menbranaccous wings, attenuating to the base and apex.

A haudsome and very singular eversteen tree, from 80 to $1: 0$ feet high, with is straight stem and horizontal spreating branehes, and flowering in the sming.

It is found in the eastern part of the island of Niphon, upon the mountains of "Kinja-San," in the province of "Kii," and probably on other of the Japran Intands.

The I'anasol Firi, accordin's to Mr. Furtune (who first sent living plants of it tor Mr: Stantish of the Royal Nursery at Haghot, in 1s(61), is a large pyramidal tree with horizontal 4preating lramehes, which attains a height of from loo to 1.50 feet, antl from 10 to 11 feet in ciremuference, tline feet from the groumb, and hot a lar-re hath or shall trea from I! to 15 fect high, is originally stated hy 1hr. Sielohd, in his "Flora Japoniea." The Japanes, humever, have several varietieanoug which sumte are dwarl hu-hes, others Inentifully val riecratel, and others with leaves raving from twon to fons inches or more in length, amd two lines broad: but all lincar, a little sickle-shaper, bhant, or slightly notehed at the points, leathery; double-ribluy, with a slathow channel running (hrough them, aml all spreading ont horizontally like the ribs of a parasol, and sit clusely clustered alternately as to look as if they stood in whorls of from $3(0)$ to 40 tugether at the ends of all the branchleti. Mi. Fortume says they are of in deep green colour, while, according to Dr. Siebuld, they must be of a yellowish-green, and remain on the treo for about three jears, by which time each brauch has from one to three para-
sols on it, aceording to its age; but in the fourth year they fall off. The cones are elliptic or eylindrieal, obtuse at the ends, and from two and a half to three inches long, aud one inch and a lialf in dianeter, and not unlike those of Pinus Cembra, but longer, and require two yeurs to ripien. The seed leaves are in twos, and very similar to those of the common Yew.

Dr. Sicbold eonsiders the Parasol Fir the finest conifer of Japan, and one which presents an appearance as strauge as elegant, in consequence of its innumerable ramifications, which always end in a parasol-like tuft of leaves. Dr. Lindley says the Sciadopitys is nearly related to the Genus Wellingtonia, a statement which, from all apearanees, seems very questionable.

Its Japanese names are "Koja-Maki"* (the wild or Mount Kojasan Maki), and "Inu-Maki" (the spurious or false Maki); while those of the Chinese are "lim-sumg-Mlaki" (the pale yellow Maki), and "Kin-sjo" (common yellow) on account of the leaves being of a pale or yellowish-green colour when young.

It is quite hardy, and has screral varieties, besides the following oue-

Sciadopitys verticillata vabibgat., Forlune, the Variegated Parasol Fir.
This variety differs in laving some of its leaves of a pale yellow colour, intermixed in the parasol-like whorls.

It forms a striking ol,ject, and is much grown in the gardens belonging to the wealthy Japanese, especially in the castern part of the island of Nippon, where it is also much planted around temples and other sacred places of worship.

Mr. Fortune first sent it to the Royal Nursery at Bagshot in 1861, from the neighbourhood of Yeddo, in Japan.

* Maki is the name commonly applied, both in China and Japan, to all the large-leared Y'cw-like plants, such as Podocarpus, Sciadopitys, ife.

Gien. SEQLOLA. Fimdlither. The Californian Redwood.
Flowers monue: isho, or male anl fomble separate, but on the same plant, solitury and termimal.
t'ones small, sub-globialur, or' obtus ly oval, an 1 ligneous.
Sectes from threo to five whler each suale, variously-shaped, and winged.

In wose two-rowed, that, anl cver areon.

 Endlicher sepmated it.

A lofty tree, fomad in California nad North-west Americia.
 or Bastard (edius.
Syn. Taxodium semprwirens, Lambert.
" $\quad$ Nutkaense, Inembert.
" Schubertia smmprevirens, sipueh.
" Courlylocarpus sempervirens, Sulixbury.
Loases on the lateral hamelies and hranchlets, linear, hlontprinted, tworowed, pread ont, flat, alternate, straight, warely falcate, leathery, persistont, shiming, dark grecon, and smooth above, mere or less glaneons, and chamelled helow; from half ant inch to an inchs longe but much shonter and smaller near the extremitios of the honts; these on the principal branches and terminal points of the flumer-berins branchots are very short, namow, starp-printed, or scate-formed, somewhat inluricatel, or elowely spimat, decurrent at the base, ribbed, and glatueus below, than on the leading shosts distant and very acute. Brauches spreading, horizontal, rather distant, irrecrularly seatterer alternately along the stem, and furnished with numerous lateral ones in two rows, those nearest the base freyhently hent downwards, white those towads the extremity are more devated. Birnchlets very mumerons, in two rows, and frequently drooping. Male howers ghbular, solitary at the extremities of the branehlets, on slender foot-stalks, thickly
covered with very small scale-like leaves. Cones solitary, terminal, somewhat globular, or egg-shaped, rather blunt at the ends, and one inch long. Scales numerous, wedge-shaped, from sixteen to twenty in number, smallest near the base, transversely keeled, very much sunken in the middle, irregularly shaped, wrinkled on the summit, and furnished in the middle of the hollow eentre with a stout, horn-shaped, blunt point directed outwards. Seeds from three to five under each seale, variously-shaped, and winged.

The seed-leaves are mostly in twos, but sometimes in threes, ovate-lanceolate, obtuse at the ends, slightly convex, and pale green on the under-side, but of a much darker colour, and somewhat glossy, aloove.

A lofty evergreen trea, growing from 200 to 300 feet high, and from twenty to thirty feet in circuinference. One tree, called by the American settlers "the Giant of the Forest," measures 270 feet high, and fifty-five fect in circumference, six feet from the ground; and there is at St. Petersburgh a horizontal slab of the wood, received by the late Dr. Fischer from the North-west coast of America, which measures fifteen feet in diameter, and 1008 annual rings marks its age. The timber is of a beautiful red colour, fine, and close-grained, but light and brittle, and never attacked by insects. It is the Californian Redwood or Bastard Cedar of the settlers, and was first discovered by Menzies in 1796, on the North-west coast of America; afterwairds by Douglas, in 1830; and by the Russians (who first introduced it to Europe in a living state), in 1843 ; but since which time it has been found growing abundantly on the mountains of Santa Cruz, about (6) miles from Monterey, in C'alifornia, where Mr. Hartweg found that it averaged 200 feet in height, with trunks from 18 to 24 feet in circumference, quite straight, and clear of branches to a height of 60 feet.

It is quite hardy, but the leaves turn to a purplish-brown in the winter:
 wood Tree.
Sym, Taxodium sempervirens glaueum, Hort. ". " albo spica, Hort.
Leaves linear, acute-pointed, three lines long, and of a fine grluenss bue tint, partimbarly on the mader site, and cither loosely imbricatel, or apenty disposent mond the hanchlets, on arronged in fwo rows latcoally. Dianchlets long, undivided, mawow, st mere, and when yomme pale yellow at the points.
This raricty differs from the species in having very much natrower and slenderer branchlets, and very much shatler leares, and altogetion at move thin mal open appearance.

## den. TAXODIUM. Rirlmit. The Deciduous Cypress.

Flueres monorions of male and fimate on the same phant, but seprate: the male omes in componal pyramidal spilese, the females two or three twor ther, near the base of the spike of male flower.

Conre globular, ligurous, athl with an meven surfice.
Siedta imh rimaterl simally, thick, and raised in the centre.
secta irrcentarly-shapeal, worly, and two at the base of each seale.

Lemes in two lows, Hat. linear, and deciduous.
Sinl-lewes from tive to nine in number.
Sime derived from rágos (Yew) and cioos (like), from its upposed resemblane to the common Yew:
All decilluons trees, fumbl in North Amerien, Mexien, and Chima.

No. 1. Taxodium distirhuar, Richered, the Deciluons Cypress. Syn. Cupressus Virginiana, Plutienett.


Leaves in two rows, flat, rather clistant, peetinate, spread out horizontal, and twisted at the hase; linear, tapering to a sharp point, bright green, and thin at the margins, half an inch long, and one line broad, somewhat arched, with the convex side outwards, and changing in the autumn from a light green to a dull red, and soon after falling off. Brauches stout, stiff, horizontal, or rising upwards at the ends, lateral ones rather pendulous. Branchlets very slender, and elegantly pimated. Male and female flowers on the same plant. The male catkins are produced in flexible pendulous aments, and the female ones in very small bunches. Cones somewhat rounded, or roundish-ovate, from one to one inch and a half in diancter, and about the size of a pigeon's egg, hard, and uneven on the surface. Scales thick, slightly striated, dull brown, raised in the middle, with it small mucro in the centre, which soon disappears after maturity: Seeds compressed. This tree is rather pyramidal when young, hut when old and full grown has flat, horizontal branches, and beenmes a lofty tree, 120 feet high, and from twenty-five to forty fect in circumference at the base, covering large tracts of country in the swamps of the Southern States of North America.

The Deciduous Cypress is found growing along the banks of rivers, and in swamps from the Delaware, which may be considered its northern boundary; to Florida; in Maryland and Virginia it is confmed to within view of the sat, where the winters are milder, and the summer more intense. In Carolinat
and Georgia, it wecupies a great part of the swaups which border the rivers in the lowlands, and in East Florida, Louisiana; and those parts of the marsles, where the deeiduous Cypress alnost alone oecupy, are called Cypers swanp, and cover thomsambs of acres. The Anericans call it the "Baht C'ypress," the " Black ('ypress," aul the "White "Spress," as it varies bery much in aprearance aromating to soil and situation. The roots of large trees, particularty in wery moist situations, produce conical protuberanees alme grvand, frequently from one to (wio) feet lifsh, amh sometimes three or four feet in thickness, hut alway hollow in the contre, smouth on the ontside, amd corered with in remblish hark, and called Cypress knees by the Intimens.

There are the following varictie:-

## 

Branches slfuder, long, horizontal, or drooping towards the ends, irtegulaty, and little dividme. Branchlet; fringed, with seattered, variable, and mergully-distant leaves.
This varicty was raivel by II. Leroy, nurseryman, at Angiers, in the couth of Franes.

Syn. Taxuliun fastigiatum, Hor\%
". " adsemelchs, Bramegniant.
-. Silubertiat clisticha imhnientin, spouch.
" Cunresuls imbrionta, Niullonl.
Branches short, mect, slightly spmading at the top. Leares two-rowed, and remembling those of the speces. This very distinct rarioty is a mold smaller and a mome compact tree, with the form of a regmin conical pyramid, or fastigiaterl leanl. It is found in the mar-hy gromuds along the sea-shome, in Florida amb Carolina, forming a small tree.

A very distinct-luoking small tree, but certainly not a distinct species.

Taxodiem nestechem Mexicinc:n, fiudon, the Montezuma C'ypress.
Syn. Taxodium pinnatum, Ifort.

| " | " | virens, linight. |
| :---: | :---: | :---: |
| " | , | Montezumax, Dunal. |
| " | " | Hugreli, Lureson. |
| " | " | Mexicanum, Curriese. |
| " | " | distichum pinnatum, Hort. |
| , | " | " exeolsum, Booth. |
| , | " | " sempervirens, $\operatorname{Rinz}$. |
|  |  | mucronatum, 'Tenure. |

Leaves linear, pointed, evergreen, or nearly so, in two rows, straight, flat, and tapering to a point, with the leaves slenderer, and more persistent than those of the common deciduous Cy press. Branches spread out and slender: Cones rather large, with the seales strongly mucronated.

This variety differs from the species in being nearly evergreen, and much tenderer. It is found growing in Mexico, forming large trees, 120 feet high, and sometimes minety feet in circumference, close to the gronnd. It forms large forests betweon Chapultepee and Tescoco, near Popotla, in Mexico.

The great Montezumia Cypress at Chapultepee, near Mexice, is of this kind, and measures ninety-nine feet in circumferenee near the ground.

This tree is called "Sabino" by the Mexicans, and yields excellent timber, but is too tender for the climate of England.

## Taxonicm mistichum anaum, Cumière.

Brancles numerous, almost horizontal, short, and resembling the species, but easily distinguisled ly its very small dimensions, forming a very compact bush, ten or twelve feet high.
It was raised by a nurseryman, near Tours, in France.
No. 2. Tayodicm meromilum, Brongniart, the Smallleaved Deciduous Cypress.
Syn. Taxodium distichum microphylhmm, S'pued.
Leaves very rariable, in some linear, "r watc-lanectate,
alcernate, in two rows, or scattered, those at the base of the shoots, from four to six lines long, tapering to a point, but becoming very much smaller towards the extremities of the branchlets, where they are hardly more than one or two lines lony; oval, blunt-ended, and having the appearance of being imbricated.

Nothing is known of this kind beyond the description given by M. Brongniart, who states that it is found in North America. It in all probability is nothing more than a mountain form of the common deciduous Cypress, as no collector or traveller in the United States has discovered it since his time full the circumstance of the leaves becoming much smaller towards the ends of the shoots, is quite a common occurrence in the deciduous Cypress in dry seatous.

## No. 8 Taxumiom Sinesse, Voisette, the Chinese Deciduous Cypres.

Sym. Taxodimm, Sinenor penduhan, Fortus. distichum penduhum, Ianednai. " " $\quad$ " $\quad$ "utans, Lemidom. . Cilyptortrobus pendulus, Éndlielie: " C'upressns distichab nut:us, Altow.
Leaves alternate, linear-lanceolate, distant, and decidnons; from three to six lines longe, without any foot-stalks at the base, and tapering into a sharp point at the apex; those on the joung shouts in the carly part of the season, are twisted, and compressed romil the sten, but more expanded and spread nut, like those of the common deeiduous Cypress, by the autumn. Branches horizontal, apread out straight, or slightly bent downwards towards the extremities, with the young hoots slender, pendulous, and closely covered with light green laaves, which fall afl during winter, and frequently the ends of the young shoots get killed at the same time hy the culd. C C

Cones ovate, or somewhat globular, woody, and light brown. Seales mucronate, and peltate, with two seeds at their base.

A very elegant small tree, growing from twelve to twenty feet high; found in the northern parts of Chima, and probably in Japan, growing in swampy places.

It is quite liardy.

Gen. TAXUS. Tournefort. The Yew.
Flower's dioceious, or male and fernale on different plants, and axillnry.

Fruit solitary, and one-seeded.
Disk a fleshy open cup, and viscid.
Seeds nut-like, with a bony shell, free, and exposed on the upper part.
Leaves linear, decurrent, and alternate.
Seed-leaves in twos, and short.
Name derived either from "taxis," arrangement, from the leaves being placed on the branchlets like the teeth of a comb, or from "toxicum," poison, the common Yew being considered poisonous, or from "toxon," a bow, the wood being much used for that purpose.

The word Taxus, however, like the Greek word "Taxen," a bow, is derived from "Tazo," or "tasso," to draw, to pull; man having learned the arts of war and lounting before his language was perfected. The English name Yew is said to come from the Celtie "iw," green.

All evergreen trees, or bushes, found io the temperate parts of Europe, Asia, and America.

## No. 1. Taxus adpressa, Kinight, the Short-leaved Japam Yew.



Leaves oblong, or bluntly oval, rounded at both ends on the lesser branchlets, but much longer and more pointed on those of the leading shonts; more or less two-rowed, flat, rather distant, on wery short foot-stalks, decurrent, and teminating at the apex in a rery short sping point, sumetines wanting on the adult cones ; fiom two to form lines lung and one line and a half broad, of a dark glosiy green above, and glancons below on hoth sides rif the middle lueve, the margins and midrih being of a glosey light green colour ; buls very cmall, oval, and covered with a lew hunt persistent seales. Branches manerolns, much divided, horizontally spealing, and sumetimes in Whorls ; lateral ones and branchlets, in two rows, Hat, slender, closely placel in clusters towards the extremities, frequently confused, short, and spreading. Fruit like that of the cronmon lew, but much smaller, and with the seed more expenent.

A dense, spreadinge, depresod bush, with humeroms flat spreading branchlets, thickly covcred with flat, sombre green leaves, seldom growing more than six or cight feet high, and found on the momatains of Japran.

It is quite hardy; but of slow growth.

## Thats anpressa stricta, Standish.

A seedling variety, raised in the Royal Nursery, Ascot, with upright leading shoots, and a more robust habit.

No. 2. Taxus paccata, Iimener, the Common Yew. Syn. Taxus baeeata vulgaris, Endlicher.
Leaves in two rows, crowded, lincar, slightly curved, or faleate, pointed, flat, entire, and slightly revolute on the margins; from three quarters of an ineh to an ineh and a quarter long, and one line and a lialf broad, of a dark shining green above, mueh paler below, with a promment mid-rib, terminating in a small point at the apex. Branehes spreading, mueh divided, and dense; brancllets long, slender, and drooping. Malo flowers axillary. Berries rounded, glutinous, drooping, open at the top, and enelosing a brown oval partially maked nut, uneonnected with the fleshy disk, which is of a scarlet colour and sweet. Seed-leaves in twos.

A small trec, or large bush, but when fully grown thirty or forty feet liggl, with a short stem, and ample spreading head, thickly elothed with branches, densely set with drooping branehlets and sombre-green leares.

It is found in most parts of Europe, at elevations of from 1000 to 4000 fect, is frequent on the Appenines, the Alps, Greeee, Spuin, Piedmont, Great Britain, the Pyrenees, the Caueasus, and even in Seandinavia, but is wanting in the Russian empire, exeept on the mountains of the Crimen and Caueasus. There are numerous varieties, of which the following are some of the most distinct.

## Taxus baccata argextea, Loudon, the Silver Variegated Yew.

Syn, Taxus baeeata, foliis variegatis, Hort.
" " elegantissima, Hort.
" " marginata, Ifort,
" " baccata variegata alba, Currière.

This very landsome variety differs, in having silvery white striped leaves, sometimes changing to straw colour.

Taxles bicceta Chemuntersis，W．Puul，the Cheshunt Yew．
A niee vancty，with mather a pyramidal habit of growth，in the way of Taxus baccata sparsifolia，but with the leaves smaller and more closely disposed all round the shoots；the spray is also much slenderer and more twiggy，with the leaves of a bright glonsy green．

It was raised by Mr．Willian Paul，of the Cheshunt Nursery， from a seed of the Irish Yew，and appears to stand midway between the common and Irish Yews，bat less formal than tho latter，and grows twice as fast．

## Taxes baceata Duvastosi，Loudon，Dovaston＇s lew：

Syn．Taxis Dorantoni，Hort．
＂$"$ pendula，Ifort．
＂$"$ baccata horizontalis，Hort．
＂$\quad$＂

This variety only differs from the ordinary kind in having its primeipal branches growing horizontal or pendent，and its hramehlets quite drooping：is very striking and handsome varicty：

## Tixus bicuata Durastoni rimangata，Moit．

A handsome，penduluas，variegated variety of the Shropshire Yew，with all the leaves when young hroadly edged with grolden yellow ；but which，when fully matured，change to a lnight green，edged with silvery white．

Thac＇s buccura mpacmomes，$H^{\prime}$ ．Peul，the Epacris－like liew．
This is a rather dwarf and somewhat spreading variety； with small light green leaves．A pretty and distinct variety：
＇lasels baceata ereiti，Loudon，the Ereet Common Jew． Syn．Taxus stricta，IIor．
．，＂erecta，Hort．
＂＂pyranidalis，R゙ルight．

This is a slender variety, with smaller foliage than the common kind, but with a mucle stiffer and more erect habit, and is ealled in some collections the Fullam Yew, or Upright Common Yew. A very nice varicty, not unfrequently obtained from seeds of the common kind. The Taxus baceata Crowderi is a slight varicty of this.

Taxus baccata ericoides, Mort, the Heath-like Yew.

| Syn. Taxus cricoides, Hort. |  |  |
| :---: | :---: | :---: |
|  |  | empetrifolia, Hort. |
|  | " | micropliylla, Hort. |
|  |  | baceata microphyll |

A sunall slender, slow-growing variety, with very small dark green foliage, and rather short, ereet, slender twigs, very distinct in apperrance, and only from one to two feet high.

Taxus bicceita pastifiata, Soudon, the Irish Yew.

| Syn. Taxus baecata Miberniea, Mort. |  |
| :---: | :--- |
| " | Hiberniea, Ilooker. |
| " | fastigiata, Iindley. |
| " | " |
| pyramidalis, Ifort, not Knight. |  |

This very distinct and singular varicty has its leaves in tufts, or seattered along the branchlets, and not two-rowed as in the common Yew, with a fastigiata or broom-shaped head, having all the branches erect, and elosely connuressed, like those of the Lombardy Poplar. It also difiecrs in having oblong berries, and not rounded ones, as in the common kind. There are the following varieties of it:-

Taxus baccita fastigata vabegata, C'amière.
Syn. Taxus baecata Hibernical variegata, Hort. " " fastigiata argentea, Fini,ylet.
This variety only differs from the Irish Yew; in having a portion of its foliare striped and margined with silvery white or pale straw-coloured blotches.

A very striking variety, of the Florence Court, or Irish Yew, when well variegated.

Taxes baccata fastiglata adrea fariegata, Fisher.
A handsome, golden variegated form of tho Irish Tcw, raised in the nursery of Messrs. Fisher and Holmes of Sheffield.

Taxes baccata Foxif, İnight, Fox's Dwarf Yew.

$$
\begin{aligned}
& \text { Syn. Taxus baceata nana, Mort. } \\
& \Rightarrow \quad \text { Foxii, Iloit. }
\end{aligned}
$$

A very dwarf kind, with much smaller and darker leaves than the speciec. It grows little more than une or two feet high, and rather spreading.

Taxus baccata frecte-huten, Loudon, the Yellow-bervied Yew.
This only differs from the common Few in the colour of its berries, which are of a beautiful golden yellow, and very handsome.

Taxes baccata ghalea, Cumiere, the Glaucous Yew.
Syn. Taxus baceata sub-glauceseens, Jacques.

$$
\text { " " } \quad \text { nigra, IF. Puul. }
$$

This is a very vigurous kind, with the leaves dark green ahove, and bluish or glaucous gray on the under part, and with the bark on the young shoots of a rusty brown colour.

> Taxt's baccata Jacksonit, W. I'aul, Jackson's Weeping Common Yew. Syn. Jackson's Weeping Yew, Hort.

A mien pendulous kind, with broad light-green foliage, all more or less incurved, falcate, and thickly covering the upper prirt of the bramehes, with the branchlets reddish-brown, numerous, short, oblinuely placed, and nore or less curred.

Taxus baccata nanis, Wr. Paul, the Dwarf conieal Yew.
This variety forms a nice dwarf, compact, conieal bush, with the leaves longer, and of a darker and more glossy green than those of the common lew. A very desirable kind on account of its dwaif, dense, and compact habit.

Taxus bacuita Nimpatmensis, Mr: Pau?, the Nidpath Castle Yew.
This is a nice varicty, with rather a columnar than pyramidal habit of growth, and with it tendeucy to spreard at the top.

## Taxles baccata mecervita, Cemiere.

Syn. Taxus recurvata, $L$ Lucson.
This kind has long straggling branches spread out and little divided, but very frequently reflected. Leaves longer and straighter than the common kind, with the margins involute.

> Taxus baccata sparsifolda, Loudon, the Scattered-leaved Yew.
> Syn. Thaxus baceata nonstrosa, Hoit.

This variety has its leaves disposed round the branches as in the Trish Yew , but with its bramehes spreading like the common Yew:

Taxus baccata fariegata, Loulon, the Variegated Jew. Syn, Taxus baceatar ratiegrata aurca, Cerriere.
This is a very handsome varicty, with its leaves mustly edged with a grolden yellow colour.

No. U. Taxus brevifola, Nuttall, the Westem or Califormian Yew.
Syn, Taxus Boursieri, Carière.
" $\quad$ baceatia Americana, Douglus.
" $\quad$ Lindleyama, Nurrey.
" Oecidentalis, Nruttall.

Leaves arranged in two rows, flat, narrow, acute-pointe.l, and somewhat curved on the bramehlets, but more or less scattered on the leading shoots and principal branches, from threequarters to an inch long, and nearly a line broad, linear-faleate, rarely straight, of a glossy yellowish green, with a projecting rib, down the middle on the upper surface, and glancous below, except on the margins and mill-rib, which are of a glosy green, with a yellowish foot-stalk one line long, a little enlarged at the base, and decurrent. Branches slender, very long, peudulous, and-covered with a yellowish bark. Fruit solitary on the muder side of the branches, and exactly like those of the Irish Yew (Taxus baceata fastigiata'. Seeds nearly globular, and yellowish brown. Wood very elastic, and used beg the ha lians to make bows.

This kind, according to Muray; is ithandsome tree, growing thirts or forty feet high, and from four to five feet in girth, five feet from the gromed, and fouml gr wing on the sides of glens, under the shade of large trees, in Northern Califormia. In. Boursier, the French tratseller, disowered this species in 1s.5t, growing along the banks of ruming streans on the higher monntains of Northern ('alifurnia, in complany with lar"ge trees of Abies Douglasii and Pinus I ambertianal. Dumglas found it ubundantly at the contluence of the Columbia, in 182.5 , and to the nortlward-, but slightly differing in appearance from the rommon l'ew.

It is called "Wia-wra-meéns" (fighting-wood, hy the Indians aloner the north-west coant of Americal, on atcount of its woul being used by them for making how.

Syn. Taxus baccata Canadensis, Iovedon.
" " ", minor, Miclueluc.
leaves lincar; crowded, rather narrow, mostly straight, but sometimes slightly curved, extended, sumewhat in two rows,
revolute on the edges, decurrent at the base, on very short footstalks, abruptly tapering to the apex, terminating in a spiny acute point, and from threc-quarters to one inch long, and one line broad, of a pale yellowish glossy green above, and a little rusty below; buds covered with blunt, ovate, persistent scales, which remain on for a long time at the base of each successive growth, in a withered state. Branches slender; rather numerous, and spreading out lorizontally, seldom ascending, but sometimes more or less bent down at the extremities ; branchlets arranged in two rows, and somewhat pendent. Male catkins globular, always solitary, and at the base of the leaf on the under side of the branchlets. Fruit like those of the common Yew, but very much smaller. Secd-leaves in twos.

A low, spreading bush, growing three or four fcet high, and readily distinguished from the Taxus baccata by the brownish appearance both of its leaves and bark, found in North America, particularly in Canada, and along the banks of the Antictern River, in Maryland, and in shady rocky places along the Columbia River.

It is quite hardy.

> Taxús Cinadensts Washingroni, Hort., Washington's Camadian Ycw.

> Syn. Taxus Washingtoni, Hort. Canadensis aurca, Hort.

This is a strong-growing variety, with large curved lenves more or less tinted with a rich golden huc. A very fine varicty, of American origin.

No. 5. Taxus cuspidata, Sicbold, the Abrupt-pointed Yew.
Leaves linear, all more or less curved upwards, alternate, stiffi, lenthery, and scattered along the priucipal leading shoots, but somewhat two-rowed, and denser on the branchlets, from three-quarters to one inch long, and one line broad, on rather long foot-stalks, broadly decurrent at the base, abruptly pointed,
witl a short, rigid, spiny point at the apex, deep glosisy green above, and pale yellowish green below, but not glancons, and with the thickened margins and mid-rib of a glossy green; buls covered with oval, acute-pointed, imbricated scaler, keeled on the back. Branches numerous and spreading. Branchlet.s rather stiff and migular, on account of the wide decurrent base of the leares. Fruit unknown.

A large, handsome bush, densely chothed with somewhat ascending branches, and dark-green foliarge, growing frons fifteen to twenty feet high, found on the Island of Jezo, in Japan, where it is mich cultivated in the town gradens, and called by the Japanese " Aramaji."

It is quite hardy.

## 

> Syn. Taxu* baceatar Meximua, Huituery.

Leaves linear, slightly emrsed or falcate, narrow; rather clovely placed in two rows alung the shoots, tapering to hoth ends, and furnished with an neute, spiny point, from threeyuaters to one inch long, and one line broid, on mather long, twisted foot-italks, decurrent at the base, dark glosey green, with an elevated nive along the midille on the upper surface, but rery much paler below; with the mill-rib and margins of a dark green coobur; buds firmished with persistent bluntpointel seales, keeled on the back. Branches longe, sprending, mueh divided, and thickly furnished with extended hranehlets. Branchlets very slender, more or leas drouping at the points, seattered irregularly in two flat horizontal rows, mostly forked, and very extended. Male and female flowers on separate treos, lateral and solitary on the umiler side of the brunchets. Fruit about the size of those of the common jew, but with the cup more eylindrical aml hell shaped, and the nut or seed flattened, globular, and more exprod. Seed-laves in twos.

A handsume, larre bush, or small tree, with quito the alppearance of the common Yew, furnislied with numerous
branches to the ground, found plentiful on the mountains of Guajolota and Real del Monte, in Mexico.

It is tolerably hardy.
No. 7. Taxus Waldicheana, Zuccarini, Dr. Wallieh's Iew. Syn. 'Taxus virgata, Wallich.
" " nucifera, $\left\{\begin{array}{c}\text { Royle, and other writer's on } \\ \text { Indian Coniferre. }\end{array}\right.$

Leaves linear; tapering to an acute point, rather distant, slightly curved or falcate, regularly two-rowed, alternate, convex above, and revolute on the margins, from one inch to one inch and in half long, and one line broad, with rather a long, twisted foot-stalk, decurrent at the base, of a deep glossy green, with an elevated nerve along the middle on the upper surfiee, much paler and not glossy below; buds small, with persistent, ovate, blunt-pointed scales. Branches long, slender, much spreading, and of a light-brown colour. Branchlets very slender, long, undivided, more or less pendent, and nearly the same size all their lengil. Male flowers lateral on the under side of the branchlets, and consisting of a number of scales, out of which eight or ten connected anthers grow, like minute clusters of primroses; the female ones, which are on a separate plant, are enveloped in scales, from which they cradually emerge, and when ripe, are open at the top, displaying the nut or bony-shelled seed sented in a red, fleshy cup. Seed-leaves in twos.

A fine evergreen tree, forming beautiful forests in Northern India, some treces measuring fifteen feet in girth four feet from the ground. It is common on the Mountains of Nepal, between 8,000 and 10,000 feet of elevation, and in Kamaon, Gurlwal, Kedarknnta, Sirmore, on the Mountains of Tibet, and between Moulmein and Northern Siam, as well as in Sikkim, where it does not descend below 9,000 fect.

This species is common in the British Himalayas and Bhotan, flourishing best between 8,000 and 9,000 fect of clevation,
but aseending in a dwarfish form to 11,800 feet. In Kumam and Gurhwal it is callerl "Rikaling," "Ikaling," and very commonly" Sung-cha" (Yew-tree), or "Pung-cha." (Tea-tree), and from tho leaves and smaller twigs of which, according to Captain Strachey, the people of Ladnkh make an inferior lind of Wack tea, under tho name of "Zang-cha," the first infusion of which, if used, would heat the blood, and oceasion pains in the limbs. In the damp climate of Sikkim it does not deseend below 0,000 feet, nud is rery rare on the inmer ranges, and unknown on the rearward ones, but attains to a lurge size in Kooloo, and on the Chmmba ranges, at an altitude of 9,000 feet, where it forms large forests; but of all tho places in the Himalayas where it is met with in greatest perfection, is at Tonghath, at an clevation of !?, (n) feet, where it oceurs in company with Abies Simithiana.

The leaves and bark are used for tea by the hill people, and is called "Thoom," of "Thooner-Birmee," in the British Himalayas; "Loosah," by the mountain people in Kamaon ; "Tingshi," in Sikkin; " Pung-cha," in Kunawur; and "Dheyri," ${ }^{\prime}$ "Lohsi," in Nepral. The people of Ludakh import tho lenvie and bark of the "Pung-cha" (Tea-tree) from Kunawur, nut only for ten, but also as yiclding a red dye, under its Cashmere name of " Chatoong." The leaves, when gathered for tea, aro finst exposed in the sun for two days, and afterwards, when dry, mixed with gum, to give them the appearanee of tea.

Most writers on Indian Conifere unaccountably confound this kind with the Japan Taxus nucifera of Thunberg (now Torreya uucifera), an error which Professur Zuccarini pointed out in his Horphology of the Coniferee, 11. 5 , 2 , 53 , after examining Dr. Nrallich's specimens; aud, ascertaining that the Indian plant was a true lew, and not a Torreya, gave it the name of 'Taxus Wrallichiama, in compliment to Dr. Wallich.

It is quite hardy, and worthy of being tried, along with the emmmon J'ew, as a substitute for Ter, in the same way as used hy the hill people of India; for it is very well known that cattle, eating the fresh green leaves and shoots of the enmmon

Yew, are poisoned, while if caten in a dried state, they are perfectly harmless.

## Gen. THUIOPSIS. Sicbold. The Broad leaved Arbor-Vitæ.

Flower's monocious, or male and female on the same plant, but separate, solitary, and terminal, the male ones eylindrieal eatkins, the females somewhat globular.

C'ones ligneous, sub-globular, and composed of eight or ten valvated, opposite, imbrieated seales.

Secles wedge-shaped, leathery, valvate, more or less orbicular, concave, smooth, and persistent.

Secels five at the base of each seale, orbicular, compressed, and free, with a membranaceous wing on each side.
lecures scale-formed, in opposite cross pairs, regularly and closely imbrieated in four rows, flattened on the upper and under surfaces.

A'ame derived from "Thuia," the Arbor-vitie, and "opsis," like, ressmblanec to the Arbor-Vite.

A majestic evergreen tree, found in moist situations in Japan.
No. 1. Thúlopsis dolabrata, Sicbold, the Hatehet-leaved Arbor-Vitie.

> Syn. Thuja dolabrata, Thunbery.
> " Platyeladus dolabrata, Spach.

Leaves in four rows, scale-formed, decussate, broad, thick, ovate, rounded at the points, and imbricated, convex above, furrowed along the middle, and of a beautiful shining deep grecu, concave-margined, and silvery white beneath, with tho marginal ones clasping over on each side, and comected at the base with the adpressed flat upper and lower ones to such an extent as to appear on the under side of the branchlet, as one
leaf surrounding the branchlet, and three-rowed on both sides, with the two outer ones narrowest and slightly curved inwards at the points, while the centre one is very broad, and quite roundod. Branches vertical, open, and pendulous at the ends, lesser or lateral ones flattened, with the branchlets plated in two rows; branehlets two-edged, very numerous, alternate, flattened, and irregnlarly divided. Cones small, ovate, without any foot-stalks, squarrose and consisting of eight or ten woody seales, reflexed at the apex, and covering five two winged seeds,

A tall overgreen tree, from forty to fifty feet high and from one to two feet in diameter, with a pyramidal-shaped head, and sertical branches droopintr towards the points, and according to Professor Thunberer, "a lofty; vast, and beautiful tree, of all evergreens the fairest."

It is found on the moint slopes of valleys in the Island of Niphon, in Japan, and at Fakonia, where, after passing over the mominans of that name on the road to Yeddo, it is planterl by the road sides between Miaco and Y'eddo. It is also cultivated in pots by the Japanese.

Its Japanese numes are " Asufi," and "Asu-naro " (white or" silvery beneath), and that of the Chinese, "Can-si-hak" (white on the under side-tree of life). The term "Hak" (tree of life) is applied to all the Arbor-Vitres in China, on recount of their being green at all seasons of the year.

The tree is quito lardy, and prefers a shady situation, and one that is rather moist. There are the following varieties:Tuciopsis dolibrata Nisa, Sicbold, the Dwarf Hatchetleaved Arbor- Titre.

> Syn. Thuiopsis letevirens, Lindlry.

This variety forms a very neat, ereet, dense bush, seldom exeecding four or five feet in height, with very small leaves anl bramehlets, of a light shining green colour, like an ereet Lycopod.

It is extensively eultivated in the gardens abont Yeddo, in Japun, particularly in pots, and called "Nezu" by the Japanese.

It is perfectly hardy, rud a very desirable little shrub for rockwork and small gardeus.
thulopsis dolablrata variegata, Fortune, the Yariegated Hatelict-leaved Arbor-Vitio.
This varicty differs from the original form of the tree in having a portion of its lesser spray and leaves of a pale yellow colour, intermixed on the branehes, all over the plant.

A pretty variegated varicty, first introduced to the Royal Nursery at Bagshot liy Mr. Fortune, in 1861, from.the gardens near Yeddo, in Japan.

Cien. THUJA. Limnaus. The American Arbor Vite.
Flureis moncecious, or male and female on the same plant, lnat seproate ; the male catkins oval, the female ones solitary and terminal.

Cones ovate-oblong, solitary, terminal, leathery, and smooth, witlı a projecting tuberele below the apex of eaelı scale.

Scules valvate, from six to ten in number, in opposite pairi, and mostly unequal in size.

Seeds in twos at the base of each seale, and furnished with a transparent wing, cmarginate at the end.

Sech-leares in twos.
Leaves in opposite pairs, very small, seale-like, imbriented, compressed, and in four rows.

The name Thuju is derived from "Thyon," sacrifice, in eonsequence of the twigs and resin being formerly used in the Fast instead of incense in sacrifices. The eommon English name, Arbor-Vitic (tree of life), is deduced from its Chima and

Jipan ones. In Japan it is called "Hiba" (tree of life), and in (hina "Hak" (everlasting life), on account of the plants being evergreen, and of a lively or bright green at all seasons of the year. Bnt as the Genus Tlueje is now defined, only one of the China or Japan kinds belong to it, all the others being transferred to that of Bioto.

No. 1. Theda memosa, Gurdon, the Bush Arbor-Vite.


A spreating little bnsh, densely clothed with numerous short, tufterl, that, fin-shaped hranches, growing in all directions, and thickly set with short, forked, two-edged branchlets, of a glossy light-green ibore, hat much paler lelow, and furnished on the hack rih with an elevated trausparent gland.
This kind forms a dense, dwarf, little, confused bush, with numerous short, fan-shaped branchlets, seldon growing more than two or three feet high, somewhat resembling in its Immehlets the Nootka Sound Arbor-Tite ('Thuja plicata), but of a much lighter colont.

It is said to he found in the Antarctic regrions, and is quite hardy.

D D

No. 2. Thuja gigantea, Nutlull, the Gigantic Arbor Vitre.
Syn. Thuja plicata, Lembert, not Donn.
" $\quad$ L
" Lobii, Veitch.
"
"
"
"

Leaves in alternate opposite pairs, closely imbrieated, and without any gland on the back; those on the branches are more distant, enlarged at the base, decurrent, and tapering to an acute point, while those on the branchlets are very flat, closely placed, regularly imbrieated in four rows, mueh shorter, more rounded, and furnished with a short spiny point; the marginal nues being more or less lanecolate, bristle-pointed, and lapping over on each side, but extended at the points. Branches spreading Hat, more or less horizontal, irregularly scattered along the stem, slender, and of a deep brown colour. Branellets flattened, short, slender, flexible, alternately two-rowed, and nearly all on the imer side, quite straight, linear, and undivided. Cones small, oval, tapering to both ends, norlding, and solitary at the extremities of the short branchlets, and very much resemble those of the common American Arbor-Tita, but much more swelled in the middle, and more regnlarly attenuated, or tapering to both ends, and with the scales mueh larger, nore tapering, and much rounder or oltuse at the apex.

A fine graceful tree, found on the North-west const of Ameriea and California, growing from 50 to 1.50 feet high, witin long flexible branches, thickly clothed with branchlets. It is the yellow eypress of the colonists, and the Indians on the N. W. coast of America (all it "Noo-wy-as" (Cedar), and, according to Sir E. Belcher (in his voyage round the world), its timber is very fine grained, bright yellow, very valuable, and much used at the Russian settlement of Sitcha for building purposes; and that the natives at Nootka Sound manufaeture their cloaks of its inner bark, which turns the rain, is very pliable and soft, and is in use for mats, sails, ropes, elothing, doc.;
the bark, whiel is rather thin, is also used in covering the roofs of houses and other buildings.

> Thusa gigastel erecta, $R$. Smith, the Erect Giant Arbor-Vitre.

Syn. Thuja Lobbii erecta, IIort.
This is a much closer and a more upright growing kind than the species, and of a brighter green; it is a nice and distinct kind.

Thluja gignisel variegilta, Hurt., the Variegated Giant Arbor-Vitie.
Syn. Thuja Lolbii variegatia, Ifort.
This is a handsome, variegatel varicty, with a considerable portion of the branchlets of a pale yellow colour, distributed irregularly all over the plant.

> No. 3. Thesa Occmentalis, Linneves, the American Arbor-Vite.

Syn. Thujn Theophrasti, Bunkim.
" obtusa, Mumell.
"Curressus Arbor-Vitic, Targiovi.
Learns vory small, in opposite pairs, ovate-rhombid, hluntpointed, clusely imbrieated and flattened, thickly pressed along the branchlets, in four rows, nud with an elevated glaml on the back of the upper and under ones, which are the broadest, while the marginal ones lap over on both sides; those on the older branches are more distant, acute, extended at the points, decurrent, and of a dull yellowish green, strongly seented when hruised. Branches tistant, horizontal, nud irregularly seattered along the stem; smaller ones drooping, and twisted in various directions; branchlets apread out laterally; munerous, twoalgeil, alternate, short, flattened, ramified, and covered with numerous small leavers of a bright shining green colour. Cones ubovate, four lines long, solitary, on short font-stalks, covered 1 1 2
with small, scale-like leaves. Scales mostly six in number, oblong, and sprealing at the points, the centre one truncate, and divided to the hase, and each containing two seeds. Seeds very small, surmounted by a short wing, emarginate at the end.

A large bush or tree, growing in its native country from forty to fifty fuet high, furnished to the ground with loose, spreading branches, and found in most parts of North Anerica, from Camada to the mountains of Virginia and Carolina, but rather scarec in the Southern States, and only on the banks of mountain streams. It is found abundantly on the Hudson, and very common in Lower Canada, New Brunswiek, Vermont, and the distriet of Maine. There are the following varieties:-

Theja Occidentalis algentea, Camiore.
This has some of the branchlets of a silvery white colour, intermixed with the ordinary ones on the plant.

Theda Occidentalis compacta, $R$. Smith, the Compact American Arbor-Vitie.
This variety is conical in outline, very compact in its growth, and appears to be intermediate between the American and Siberian Arbor Vitas. It originated in the nursery of Mr. Richard Smith, of W'orcester.
Thuja Occideathlis cristata, (idipps, the Crested ArburVitæ.
A distinct variety with small, deep green, closely armanged, spreading branchlets of various sizes, frepuently recurved, and cock's-comb shaped, towards the ends of the branches.

Thuja Occidentalis nesish, Gordon, the Bagshot Park Arbor-Titre.
Syn. Thuja compacta, Skendish, not smith.
", " C'aucasica, Hort.
A fine, dense, conical bush, with short, stout, compact branches, and horizontal, flat, fim-shaped branchlets of a rich glossy colour, regularly imbricated with ovate, compressed, glossy-green leaves, arranged in four rows.

This kind forms a large, compact, pyramidal busl, growing from twenty to thirty feet ligh, and nearly as denise as the Chimese Arhor-Vite. It somewhat resembles the Thuja plicata, but is of a much brighter green, and less coarse in its branchlets.

Some fine old plants of this kind are to be seen in the pleasure-grounds at Bagshot Park, the former residence of Her Royal Highness the Duchess of Ciloucester, in Surrey.

Theja Occinenturis cilobosis, Ifort.. the Cilobular Arbor-Vitr.
This rariety forms a dwarf, dense, globular bush, which, execpt in stature and outline, is very similar to the common form of the American Arbor-Vitee.

> Thish Oirmberndis Hovfil, Hoit, Hovey's American. Arbor-Vite.

Sym. Thinji Hoveyi, Hort.
This waicty furms a round, compact bush, with numerous flat hrauchlets, and strap-shaped spray, clowely imbricated with orate, bright green leaves, mostly furmi-hed on the back with a transparent ghand. It is slenderer, smaller, and of a much lighter green than the specits, and of American origin.

Thida (hadextalis rendela, fordon, the Reverted- * branched Arbur-Vitar.
This variety differs in laving the principal branches along the mainstem in a reverted position, and in the lranchlets being more dencely clustered or tufted towards the ends of the branches, and in a more declining position.

The original plant is in Mr. Standish's Nursery at Bagshot.

## Theja Occidentalis vamiegiata, Lonilon. Syn. Thuja variegata, Marsh.

This only differs in laving some of the iranchlets of a pale yellow colour, intermixed with the ordinary light green ones on the phant.

## Thuja Occinentalis Vervaeneana, Hort., the New Belgian Variegated Arbor-Vitæ.

 Syn. Thuja Vervaeneana, Venn-Gcert.This is $\pi$ pretty golden-tinted vnriety, with very slender branchlets, raised, by M. Vervaene, of Ghent, from the common American Arbor-Vitre.

Thuja Occidentalis Walthamensis, Wm. Paul, the Walthan Cross seedling Arbor-Vitre.

This kind forms a handsome, dense, pyramidal bush, from six to eight feet high, and appears to be intermediate between the American and Tartarian Arbor-Vitres.

It is a fine hnrdy kind, raised in the Waltham Cross Nursery, in Hertfordshire.

No. 4. Thuja pliciata, Domn, the Nootka Sound Arbor-Vite.

|  | " | compacta, Kniglet. |
| :---: | :---: | :---: |
| " | " | asplenifolia, Hort. |
| " | " | Orientalis flagelliformis, Hort. |
| " | " | Wareana, Booth, not of others. |
| " |  | flagelliformis, Ifort. |
|  |  | odorata, Marshall. |

Leaves, on the adult plants, ovate, blunt-pointed, regularly imbricated in four rows, quite flat, entire, smooth, shining bright green above, and dull glaucous green below; those on the upper and under sides of the branches and branchlets having $\Omega$ conspicuous clevated gland on the back rib towards the point, and are much broader and less pointed than the side or marginal ones, which lap over on both sides, and appear shorter, more pointed, and regularly jointed, while those on the young plants are very much pointed, particularly the marginal ones, which appear nearly lanceolate, and extended at the points, decurrent at the base, loosely imbricated, and
rarely showing the gland on the back; but as the plant matures, they gradually develop, and the leaves become ovate, more closely flattened along the stems, blunt-pointed, and the branches more rounded along the edges, jointed, and twoadged. Bramelies horizontal, rather short, flattened lengethways, spreading, rather compact, and senttered along tho stem, with the smaller or lateral ones alternate, regularly tworowed, straight, quite flat, and pointing outwards at an acuto angle. Branchlets long, straight, linear, flant and two-edged, regularly jointed, and entirely covered with ovate, bluntpointed, closely flattened leares, in opposite pairs, as if plaited, with a row of transpareut glands along both sides on the back of the leaves. Cones small, snlitary, noddines, scattered, and ovate-olifong. Seales elliptic, blunt at the ends, Hat, partially furrowed, and mostly six in mmber, each containing two seeds, ins eraly heart-shaped, and surrounded by a transparent wing, emargimated at tho apex.

A small treer, resembling the American Arbor-Viter, thickly clothed with spreading, light green branches, found along the western shores of Nortls America at Nootka Sound, and, acconling to some writers, "xtending into Northern Muxico.

It is quite landy, and differs from the common American Arbor-Vite in having the branches very much shorter, more compact, stonter, and densely covered with small ovate, thattened leaves, bluntly pointed, ant in four rows, with a plaited or jointed appearance.

Theja phedid varifgata, Cumitiof, the Variegated Nootka Sound Arbor-Vitre.

## Syn. Thuja Wareana varicerata, IFort.

A pretty variety, only differing from the original form in laving a portion of its leaves and lesser spray of a pale yellow, intermixed all over the plant in a rariegated manner, and in its less robust habit.

It is of French origin.

Thuja plicata minima, R. Smith, the Miniature Plicatebranched Arbor-Vitr.

This is a very compact, miniature variety, so slow in growth, that its average annual growth does not exeeed an inel in length.

## No. 5. Thuja Standishi, Gordon, Standish's Japan ArborVite.

> Syu. Thuiopsis Standishi, Gordon. " Thuya Japonica, Muximo, not Siebold. " " gigantea Standishi, Parlatore.

Leaves ovate, blunt-pointed, in opposite pairs, and closely imbrieated in four rows along the branchlets, the marginn ones elasping over on eneh side, and overlapping the adpressed upper and lower ones, so as to have the appearance of being arranged in three rows on each side of the flat two-edged branellets, with the two outer ones the narrowest, and slightly curved inwards at the points, while the central or flattened ones above and below are broad, blunt-pointed, more or less enelosed by the marginal ones, and all of a deep glossy green above, and dull glaucous white below, exeept the midrib and thickened margins, which are of a bright glossy green and glandless, but thickened at the points. Branches seattered all round the stem, distantly placed, spreading, and more or less horizontal or declining towards the ends. Branchlets nnd smaller spray two-edgred, flat, alternate, quite straight, linear; closely imbrieated in four rows, and of a deep glossy green above, and dull glaucous white below. Cones small, and like those of the American Arbor-Vite, composed of valvate seales.

A tree, somewhat resembling Thuiopsis dolabrata in general appearance, but with slenderer branches, and smaller leaves, mueh less silvery below.

This kind was first introduced by Mr. Standish, of the Royal

Nursery at Bagshot, in the early part of 1861, through his friend, Mr. Robert Fortune, who discovered it near Yeddo, in Japan. It has been mamed in complinent to Mr. John Standish, who has been the means of introducing and disseminating so many beautiful and vahable Eastern plants thronghout Europe and America. It is quite hardy and very distinct.

So. 6. Theda Tatarica, Lorldiges, the Tartarian Arbor-Vite.

| " |  | Sibirica, Linncers. |
| :---: | :---: | :---: |
| " | " | " compacta, $\mathrm{K}^{\text {ruight. }}$ |
| , | , | Wareana, Hort. |
| " | ," | Occidentalis Wareana, Kinight. |
| " | " | Wareana, Ilort. |
| " | " | pyramidalis, Tenore. |
| " | , | Australis, Mort. |
| " |  | Orientalis Tatarica, Lutrison. |
| " | Bintr | Tatirica, Loulden. |
|  | " | " Wareana, Hort. |
|  |  | Wareana, Ilort. |
| " | " | byramidalis, Corrière. |
|  |  | Orientalis Tatarica, Endlich |

Leaves in opposite alternate pairs, closely imbricated in four rows, bluntly oval, thick at the points, somewhat flattened, and furnished with a transparent gland on the back. Branches thickly set on the main stem, somewhat horizontal, mather flat, lense, compact, fan-shaped, and thickly placed in two horizontal rows along the lesser sprays. Cones identical with those of the American Arbor-Vite.

The Tartarian, or, as it is sometimes ealled, the Siberian Arbor- Vite, has been misplaced in the Genus Biota by Mr. Loudon and nearly all modern writers, although it strictly belongs to the Cemus Thuja, as now defined, it laving cones exactly similar to those of the American Arbor-Vite, with
valvate seales, containing two emarginate winged seeds at the base of each.

This kind was originally raised many years ago by Mr, Ware, a nurseryman at Coventry, and forms a dense conieal bush, furnished with branches down to the ground, and from eight to ten feet high.

Gen. TORREYA. Amott. The Stinking Yews.
Flower's dicecious, or male and female on different plants. Males solitary; females in twos or threes, and crect, and all axillary.

Pruit one-seeded, drupaceous, or fleshy on the outside like the common plum.

Seeds singly in each fruit, with the albumen ruminated like the inside of the common nutmeg, and covered with a hard bony shell.

Leaves linear, or lanceolate, decurrent at the base, and either opposite or alternate.

Seed-leares in twos.
Named in compliment to Dr. Torrey, the celebrated American botanist, and one of the authors of the North Aneriean Flora.

All small evergreen trees, found either in North America, China, or Japan, and emitting a strong disagreenble smell from all parts when bruised.

## No. 1. Torreya Californtca, Torvey, the Californian Nutmeg.

Syn. Torreyn myristica, Hoolier.
Leaves in two rows, long, narrow, and opposite on the branchlets, but somewhat alternate and seattered round the stems and principal shoots, linear-lanceolate, mostly quite
straight, but sometimes slightly faleate, tapering to a long neute spiny point, somewhat lanceolate at the summit, and tapering into a very sloort twisted foot-stalk, decurrent at the base; from two to two inches and a half long, and one line and a lalf broarl, of a pale yellowish green, without any mid-rib, and slightly convex on the upper surface, but much paler on tho under one, and marked longitudinally on each side of the eentre nerve, with a narrow sunken band, whitish when young, but nfterwards assuming a brown colour. Buds covered with persistent oval seales. Male eathins axillary, and solitiury ; femalo flowers in twos or threes on short peduncles, and axillary. Fruit elliptic, and from one inel and a quarter to one inch and a half long, with $\Omega$ thin fleshy or leatliery green covering, quite smooth when ripe outside, and very similar to that of Torreya taxifolia. Seeds with a hard bony shell. Secd-leaves in twos.

A small bushy-headed tree, growing from twenty to forty feet high, with spreading more or less horizontal branches; found growing on the Sierra Nevada Momntains in California.

Timber yellowish, heary, and fune-grained; but all parts of the tree emit a very disagreeable odour, when either brnised or burned, and is called by the Californian emigrants the Stinking Yew, or Californian Nutmeg.

It is quito hardy.

No. 2. Torreya nucifera, Zuccurini, the Nut-bearing Torreya.

$$
\text { Syn. Thxus nucifera, } \quad\left\{\begin{array}{c}
\text { Thunberg, not Wallich, and } \\
\text { other Iudian writers. }
\end{array}\right.
$$

> , Caryotaxus nueifera, Zuccurini.
> ,, Podocurpus nueifera, Persoon.
> " " Corema, V'an Houtte.

Leaves linenr, rounded at the base, and somewhat two-rowed on the branchlets, but more or less distant, and seattered round the loading sloots, quite straight, flat, leathery, and tapering to rather a long, spiny ncute point, mostly curved downwards; from one to one inch and three-quarters long, and one line and
a half broad, on very short foot-stallks, of a deep glossy green, and eonvex on both sides of the mid-rib, which is a little sunk on the upper surface, and glaucous white below, exeept on the centre nerve and margins, which are of a deep glossy green, and rather elevated. Buds furnished with persistent, extended, neute-pointed seales. Branches numerous, cither in whorls, alternate, or scattered along the stem, spread out, horizontal, and covered with sealy bark. Branehlets two-rowed, spreading, and rather short. Male eatkins oval, or cylindrical; femalo flowers in pairs, or in threes in close heads on short peduneles. Fruit the size of a large nut, three-quarters of an ineh long, and half an inell broad, oval, or ovate-oblong, largest at the base, slightly tapering to a small point at the apex, and covered with a firm, fleshy, thin, green tissue, very smonth, and glossy ontside. Seed oval, with a hard bony shell. Seed-leaves in twos.

A small tree, growing from twenty to thirty feet liigh on the mountains on the Islands of Nippon and Sikok, in Japan, but eultivated all over Japan, where an oil is made from the kernels of the nuts, which is said to be used for culinary purposes, though the kernel itself is too astringent to be eaten, and all parts of the plant when bruised emit a disagreeable odour. Its Japanese names are Kaja-Ksa (strong-seented yew) and "Fi-Koja" (slender Yew) .and, according to Kiompfer, it is very frequent in the northern provinees of Japan, where it forms a tree twenty feet high, with many opposite sealy branches. Dr: Royle erroncously (as pointed out by Major Madden) extends its halitat to the Choor and Kedarkanta Monntains in Sirmore and Gurwlial, in India.

It is tolerably hardy.
No. 3. Torreya taxifolia, Amote, the Yer-leaved Torreya. Syn. Taxus Montana, Nuttall.
" Torreya Montana, Hort.
Leaves, on the stems and prineipal shoots, alternate, spreading, or reflected, and rather distant, those on the branelilets

Closely placed in two rows, nearly or cquite apposite, romded at the lase, and somewhat reenved at the extremity. linear, frequently fileate, stifi, of it leathery texture, on very short frot-stalks, twisted, and decurrent at the base, aud tapering to a long acute spiny point at the apex, somewhat lanecolate; from one to one inch and three-quarters long, and one line and a half inroat, of a light green, glossy, and comex on the upper surface, lut without imy nerve along the middle, while the under one is slightly concave near the elloses, prale glaucous gray, and marked on ench side of the mid-rib with two reddish narrow sunken bands. Branches numerous, mostly in whorls, spreadinge, smooth, and two or three forked at each division. Branchlets somewhat two-rowed, and horizontal. Male eatkins linear ; fenale Howers without foot-stalks, and erect. Fruit, when riph; oval, a little pointed, nearly as large as an ordinary walnot, with the external coat flechy or rather leathery, and covering the whole surface of the secel, except a minute perforation at the top. Seed solitary, and when cleprived of its sueculent catermal covering, very much resembling a large acorn, with it lieautiful rumimated allomen, resembling the invide of a mutmegrg and covered with a hard bony thell. Smed-leares in twos.

A handsome pyramidal-shaped evergecen tree, with momerons sprealing hranches, errowing from forty to tifty fect high, and eightern inches in dimmeter; foum in the midde and Nurthern parts of Florila, growing ahumdantly about Aspalaga, on Chlearous Rucks, and along the lanks of rivers near Flat C'reek. The whole plant hias a strongr and particulanly disagrecable smell, espectially when hrused or bumen, and is called by the Americans "Stinking (edar," and by the people in the eountry where it grows, " witd nutmeg."

Timber dense, close-graned, heary, and of a reddisli colour.
It is not quite hardy in some parts.

## Gen. WELLINGTONIA. Lindley. The Mamnoth Tree.

Flower's monoccious, or male and female, separate, but on the same plant.

Cones large, solitary, obtusely oval, and woody.
Scales placed at right angles upon the axis of the conc, wedge-shaped, persistent, and peltated.

Seeds from three to five under cacli scale, but mostly five.
Seed-lectes from three to six, but mostly in fours.
Lerves needle-shaped, spiral, and persistent, or scale-formed, and imbrieated on adult trees.

Named in compliment to the late Duke of Wellington.
A gigantic tree from California.
The Genus Wellingtonia is considered by most systematic botanists as untenable, it not being sufficiently distinct from Professor Endlicher's Genus Sequoia; nevertheless, as the name has now been universally adopted in Garden Litcrature, it had much better be allowed to stand, as its alteration would eanse great inconvenience and much confusion in practical Botany.

The seed-leaves (cotyledons) are from three to six in number, but mostly in fours in Wellingtonia, while those of the Sequoie are mostly in twos, but sometimes in threes.

The leaves on matured plants of Wcllingtonia are also scalcformed, elosely imbricated, and attached to the branch by a broad base; and when, as happens in the more vigorous shoots, the leaves acquire unusual development; they still are sessile, with is triangular seetion, and no tendeney whatever to form a flat leaf; while the leaves of the Sequoia always aequire the form and expansion of a 'raxus, and are two-rowed.

## Welingatonia gicintes, Linalley, the Mammoth Tree.



Leaves needlc-shaped, spirally alternate, spreading. perwistent, and of a light green enlour on the young plants; thase on the adult treess seale-formed, elosely intail, romuled on the hanck, and concave on the inner faec ; thowe on the hranehlets much shorter, very cluse, and regulally imbricated ; those on the larger hrauches longer, lower, decurrent at the base, and tapering to an acute paint, lunt sometimes rather cobtuse. Branches spread out horizontal, much diviled, and furnished with mumerous laterals. Branchlets cylindrical, frectuently pendulons, and thiekly wored with light-green glatemes fuliage, cone-bearing onles slightly thickened, and entirely covered with seale formed leaves elonely inmbinatol, the upprer ones oval, and broudest at the Mase. Comes solitary on the ends of the luanchlets, two inches long, and more than one inch in diemeter, owate, blunt-cndel, aul slightly tapering towards hoth extremitice. Sealus in servies, phated inearly at right augles unom the axis of the cone, stipitate, thiekened, and enlinged from the point of insertion ns fur as the summit, which is lepressed and wrinkled on the external faec, and furnished with a small prickle in the centre of the little hollow. Sieds from three to fixe under each seale, but mostly five. Seedleaves from three to six in number, but mostly in fours.
This magnifiecut evergreen tree was first diseovered hy Donghas in 15:31, and on account of its extraordinary height and dimensions, is called by the A merican settlers in California the "Manmoth 'Tree ;" and, according to Mr. G. L. Trask, who formerly extibited a jortion of the bark set up in the Crystal

Palace, to show the great size this tree attains in its native state, gives the following as the dimensions of one of the largest of eighty trees, growing in a grove at San Antonio, viz: :-liciglht, 363 fect ; circumferenee near the ground, 93 feet; circumference 100 feet from the ground, 45 feet; bark, 18 inches thick; age according to amual rings, from 3000 to 4000 years.

It is found growing on the slopes of the Sierra Nevada, near the sources of the Stanislaus and San Antonio, in Upper Callifornia, in sheltered valleys, at an clevation of about 5000 feet. It is quite hardy and grows rapidly.
Wellingtona gigantea variegata, Hoit., the Variogated Wellingtonia.
A very striking varicty, with about one-fourth of the branelılets of a delicate straw colour.

Gen. WIDDRINGTONIA. Endlicher. The African Cypress.
Flowers dioceious, or male and female on separato plants, and terminal; the male eatkins oblong or eylindrieal; the female ones globular, and without foot-stalks.

Cones globular, cither solitary or two or three together, and composed of four ralves or scales.

Scules, or values, four in number, oval, mucronate, somewhat in whorls round a depressed axis, with the edges converging.

Secels frequently fow from abortion, but with from five to ten orules at the base of each seale, in one or two series, and covered with a somewhat erustaceous tegument, spreading on each side into a membranaceous wing.

Sreed-lecte'es in twos.
Lecuves thiekly set, altermately or in whorls, linear or needleshaped, spreading, but sometimes very small, sealc-formed, and approaching imbrieate, with a gland on the back.

Named in compliment to Captain Widdrington (formerly Cook), who travelled in Spain.

All evergreen buahes or sinall trees, fuond at the Cape of Good Hope and Madagasear.

No. 1. Widdringtona Commersonit, Eucllicher.
Syn. Thuja quadrangularis, Ventemet. Pachylepis Commersonii, Brongniart.
Leaves very short, acute, and distant on the hranches, obtuse, elosely set torgether, and disposed in four rows on the branchlets. Branches numerous, spread out, and close together along the stem. Branchlets slender, numerous, and rather pendent. Cones globular, almost the size of a walnut, and quite smooth. Valves very thick, without any points, hut rounded in the centre, slightly swelling towards the $\rightarrow$ mimit on the onter sile, keeled on the immer one, and huddled together at the pmints.

A species of which little is known beyond its heing found in Madagascar, and was formerly in the Botanic Garden of the Hauritius, but not yet introduced into Hongland, and, no doubt, very tender.

No. 2. Widmeingtonia cutressomes, Emdlicher.

|  | aphy-lla, Burmuzu. |
| :---: | :---: |
| " | Callitris Capensis, Schouder. |
| " | mupressoides sichoder. |
| " | Pachylepis cupressoides, Brongniart. |
|  | Widulringtonia glauca, Cumime. |

Leaves on the brancles, acute, sonewhat spreading at the points; those on the branchlets, four-rowed, much shorter, and imbrieated. Branches clongated, erect, and pyramidal. Branchlets slender, hent downwards, or pendent at the ends, and covered with leaves. Cones ovate-obtuse, from nine to ten lines long, and much larger than those of Widdringtonia juniperoides. V'alves woody, slightly convex, pminted,
erect, huddled together at the points, terminated hy a little conical point, sharply keclerl on the inuer face, and enclosing two sceds.

A bush, from four to ten fect high, found in the southern parts of the Cape of Good Hope, at elevations of from 1000 to 3000 fect, and called Saprehout by the Dutch settlers.

It is quite tender.

> No. 3. Widdringtoxia juxiperones, Endlicher.
> Syn. Cupressus juniperoides, Linncuus.
> "" $\quad$ Africana, Miller.
> " Juniperus Capensis, Lamarcl.
> " Taxodiun juniperoides, Hort.
> " $\quad$ Capense, Hort.
> " Schubertia Capensis, Sclerader.
> " Pachylepis juniperoides, Brongniart.
> ", Callitris arborea, Sclurculer.
> " Parolinia juniperoides, Endllecer.

Leaves without any foot-stalks, but adhering at the base, and ruming down the stem, leathery, and glaucous-green, the younger ones mostly lincar, or necalle-shiperd, smooth, sharppointed, and slightly three-nerved, spreading, slightly curved, opposite, or in whorls of three, and from three-quarters to an inch long, and three-quarters of a line broad at the base ; the adult ones are seattered ; those on the branehlets are sometimes ovatelanceolate, or rhomboid-obtuse, or sharp-pointed, terminating in a small bristle-point, or creet and loosely imbricated, with a slightly sunken gland on the back. Branches spreading, and pointing upwards at the ends. Branchlets erect, or sometimes sprearling, angular, frequently very short, and covered with needle-shaped leaves. Male flowers oblong-eylindrical and terminal. Cones on the laterals, in clusters of three or four together, rounded, and slightly depressed. Valves oval, woody, reddish brown, shining, and closing upwards to the top, level on the interior face, and with two seeds under each.

A midale-sized tree, with a straight stem, and ample head, found in the western parts of the Cape of Cood Hope, on the Mountains of Blausberg, at an clevation of from 3000 to 4000 feet, and plentiful on Cedernberg ('edar Mount). It is the Cedar-boom of the Duteh settlers.

It is quite tender.

## 

This kind is said to resemble Widdrimgtonia cupressnides, hat with numerous more slemer liranchlets, and with the leaves all acute, having a gland upos the hack, and with the female flowers in twins, in loose termimal eprikes.

A kind of which little further is known hejond its being found at Port Natal in south Africa.

It is not yet introluced, and certainly tendel.

## No. 5. Whmmaveronia Waldemin, Emallather.

This species is clocely related to Widhingtomia empressoiles, but certainly different, aceorling to wir Win. Howker in his Journal of Botany:

It forme a midulle-sizal treer, with a stem from 1.5 to 18 inches in diameter, and was first disenvered ly Dr. Wallich, in the environs of the Cape of Cood Hopre, hut has not yet been introdluced into Einglamet.

## ADUENDA.

## Abies Chaidensis alba spica, Burion, the Variegated Hemlock Spruce.

This variety differs from the ordinary form, in having the leaves on the ends of the young growth of a whitish colvur.

A rather pretty variety:

> Abies Caitinexsis Mheformexsis, Fineng, the Milford Dwarf Henlock Spruce.

This is a dwarf varicty, globular in form, with the sloots stender and dropjing, and the leaves momeh smatler than those of the common Hemlock sipruce. It is quite distinet from the Canalensiy gracilis, and originated in the nurnery of Mr. Mauria Young, at Miltord, in surrey.

The Ahies Hanburyana, in sume collections, is the same as Ahies Thugra, and in others as the Abies Pattoniana, of which there are two forms, one with the leaves much more glatuens than the other, and it is to the least glaucous form of Abies Pattoniana, that the name Hanbmryana is applied ; botly forms are in the nurseries of Mesors. Veitch and Mr. Barron.

Arateamid excmasi, spfochosisisina, hud-Purie, the very showy Norfilk lslam Pine.
This varicty of the Norfolk I land Pine, according to the

Revue Horticole, is one of the prettiest kinds prodneed, and is remarkable for its hardiness, as well as for its appearance, which somewhat resembles the Araucaria Cuminghamii, but is of larger size. The distinguishing characteristic of this variety, independent of its appearance and hardiness, is the length of the leaves, which are very large and curved, or curled up, and reach a length of four centimetres, and then terminate in a sharp point. This eurling up of the leaves gives the boughs exactly the appearance of the Araucaria Cunninghamii, and appears to be an intermediate link between the two kinds. It is in the establishment of Mr. Rougier-Chanvier, near Paris.
Biota Orientalis Ascotensis, Iurt., the Variegated Aseot Arbor Vitte.
This is a very nice variegated variety, with slender, upright branchlets, a good portion of which are of a bright golden colour.

Biota Orientalis macrocarpa, Hort., the Large-fruited ArborVitie. Syn. Biota Macrocnrpa, Mort. " ", Japonicir laxa, J. Scott.
This is a dwarf, loose-growing variety of the Japoniea type, with slender, drooping branches, and rather distant, alternate, flattened branchlets, regularly furnished laterally with small, bright-green spray.

It is a nice slender kind.
Bioti Orientalis semper-aurescens, Lemoine, the Ever Golden-Tinted Arbor Vitec.
This varicty has a dwarf, dense, conical habit of growth, very similar to that of tire Biotar Orientalis aurea, but differs from it in retaining its golden hue throughout the year. It is a very desirable rariety, originally obtained from France.
Biota Orientalis Zuccariniafa, Mort., the Dwarf Gireel Japan Arbor Vitæ.
This is a neat, compract, dwarf variety, globular in form, and
of a fine bright green colour, which it retains well through the winter.

A nice dwarf varicty, from Japan, which is said to come true from seed.

Cemrés Deodara alba spici, Mont., the White Variegated Derolar Cedar. Syn. Cedrus Deodara variegata, Mtort.
This is a variegated form, with sonte of the luaves on the side spurs and learling shoots of a whitish coluur.

It is not a very atfractive variety.
 grated White Cedins.
This sariety differs from the ohl variegated one in having as gronl part of the lenser hranchlets of it rich golden colour.

It is a continental production, aml particularly attractive in the spring.
 Japan Codar.
This is a very sincrular variety, with the lenves closely arranged, more ore less spirally all romme the branchlets, or with some of them chesely inewred and twi ted in the lower parts, and abruptly extenden horizontally at the points and pungront.

It is a slender-growing kind, with cord-like branchlets of a hright green celunr.

## Cripptomerba Japonhea vera, Siobolel.

This is consildered tos the orionimil form of the Japan Cedar; found in the morth of Jip:un. It diffiers from the one originally introluced from the north of China hy Mr. Fortune, in its more onnpact hatit of growth, much stiffis and erecter branches, mad in its not turning near so brown in the winter.

It has recently been intromeed by Mr. Young, of Milford.

Cupressus Covenina ghuctescens, Hort., the Glaueeseent Gowen's Cypress.
This remarkable varicty was raised by M. Sahut, of Montpelier, and is distinguished from the original bright-green form of the species by its more robust habit and grosser branchlets, and by the chanacteristic glaucescence of all parts of the plant, which has a houry-blue tint wery lare in cypresses.

It is in the nursery of Mr: Smith, at Wrorcester.
Cupresses Lawsonlara alba spica (Young's Variety).
This is a fine free-growing variety, of a bright green colour, with the lesser spray thickly speekled all over with white leaves, which have the appearance of countless white specks, and whieh renders the plant very attraetive during the spring and summer months.

It was raised in Mr. Young's nursery, at Milford, and is a very different kind from the one generally known under the name of alba spica.
Cuptessus Lawsonlana albi spica naja, Hort, the Dwarf Silvery"White Lawson's Cypress.
Syn. Cupressus Lawsoniana alba nama, Ilort.
This is a dwaif, compaet-growing variety, with the points of the young wood of a beatiful silvery white colour:

A very elegant and distinct variety, of continental origin.
Cupressus Lawsonlaya cardelea, Hort., the Blue Lawson's Oypress.
This is a fine, empact, elose growing variety, with the foliage of a bluish-green colour, shaded with gray. It is a distinct, continental produetion, which always retains the blue tint.

Cupressus Lamsonina elegantissma, Barron, the Very Elegrant Lawson's Cypress.
This is a remarkable fine variety, mised by Mr. Barron, of the Elvaston Nursery, which has not only the young leaves, but the young wood of a beatuiful callary coluur, and which colour is
not impaired, either by the sun's rays in summer, or the frost in winter.

It is a very desirable kind, on aecount of the fine canary colour, which is diffused all over the bramehlets.
Cupressus Lathonlina mereat vimdis, A. Wuterer; the Bright-Green Erect Lawson's Cypress.
This is a very fine nud distinct kind with a dense, compact, fastigiate head, and very close, ereet, slemler branchlets of a beantiful bright-green colour. It was raised in the Nursery of Mr. Anthony Waterer, at Knaphill, Surrey, and is very superior to either the L"pight Cypress, lrish lew, or Swedish Juniper, fur planting singly on terraces or in formal llower Gardens, on recount of its upright and very compact habit, and fine bright green colour.

This variety of Lawson's CYpress inust not be confounded with the one known under the names of erecte and viridis (see $p .8 \overline{7}$ ), as it is more nurisht and compact in its habit, and of a mure beautiful green tint.
C'upresse's Nutkamsis acrea vamegita, M. Young, the Gohlen Variegated Niootka Sound (ypress. Syn. Thuiopsis Borealis aurea varimata, Mort.
This is a fine and constant varimgated form, with a grond portion of the lesser branchlets of a light bronzy-yellow colour, which becomes much brighter in the smamer.

It origimated in the nursery of Mr. Manrice Young, at Milford, in a leading shout on the eommon form of the species.

Cupmoses Nutkamisis compacta, Ihut., the Compact Noutka sound (spres.
Syn. Thuiupsis Borealis compheta, Ilort.
This is a Belgian varicty, somewhat paramidal in shape, with the branches and branchlets more compact, slenderer, and of a brighter green than the splecies.

It is tulembly distinct, and forms a cluse, bushy head, without a leadingro shout.

Cupressus Nutkaexsis glauca, Hort, the Glaueous Nootka Sound Cypress.
This variety only differs from the ordinary form of the speeies in its glaueous colour.

Juniperus Chinexsis Aurea, Young's Variety, Mr. Young's Golden Chinese Juniper.
This is a very beautiful and constant variety of the male form of the plant, with all the more prominent portions and exposed parts suffused with a rieh golden eolour. It is not what is strietly ealled variegated, but self-eoloured, and retains its rich tint through the winter as well as the summer, and is one of the very finest golden conifers at present in eultivation.

It originated in a sport, of the male form, of the Chinese Juniper, in the nursery of Mr. Mauriee Young, at Milford, in Surrey.

Juniperus Cminensis Leeafa, Ifort., Lee's Chinese Juniper. Syn. Juniperus Leema, Hort.
This is an upright and densely-branched variety, of the male form, whieh has the leaves mostly open, all over the plant, and about half an ineh long.

It was raised in the Ifammersmith nursery.
The Juniperus Sheppardir, Hort, is the same as Juniperus sphreriea glanca, Fortune, and the Juniperus venusta, of some colleetions, is the same as Juniperus Oecidentalis, Hooker.

Libocedrus decurneus depress.1, J. Scott, the Depressed Liboeedrus.
This is a distinet dwarf variety, very dense, eompaet, and glubular in form, and which grows as wide as it does high.

It originated in Mr. Scott's nursery, at Merriott, in Somersetshire, and where the original plant, after being planted ten years, las formed in globular head not more than three feet in diameter, and the same in height.

Picei Pinsapo cilacea, Ifort, the Cilaucous Pinsapo Fir.
This is a very handsome variety, with the leaves, equal in kencth and thickly plaeed at right angles round the shoots. The leaves are very rigisl, half an inch long, blunt-prointed, srmewhat rounded, and quite glaucous on the upper surface, and with two conspienous glancous white bands beneath, separated by the mid-rib, which is, as well as the margins, of a brifht-green colour.

It is a very fine variety on account of its silvery appearance, and is in the nurseries of Mr. Smith, of Worcester, and Mr. Seott, at Herriott, in Somersetshire.
Pants Strubles compacta, Hurt, the Compact or Bushy Weymonth Pine.
This rariaty forms a dense, compact, round-headed bush, from four to six feet high, and is very li, tinct from the Strobues nena, with which it is sometimes confounded in the Nurseries.
 hranched Japan Cypress.
This variety differs from the oricinal form, in being much slenderer in all its parts, and of a much brighter green colour. It prodnces mmerous lunde slemler, ilromping shoots, which are frequently from five to six inche; in length, before they produce any branchlets, and thin hamehnte, which are mostly proxincel in tufts near the ends of the branches, have quite a tisiselled appearance.
demmospom omfles a.ba splea, Imaron, the White Speckled, Uhitune-leaved Japan C'spreas.
This varicty is similar in eneral character to the ordinary fomm of the species, but rather more compact in habit. The young shoots are pure white when first they appear in the pringe, and remain so for' ahout three months, when they grombally change, and finally hecome green.

A niee, distinct varicty:

Retlnospora obtusa qracilis aurea, Veitch, the Slender Golden Japan Cypress.
This is a fine free-growing kind, very similar in habit to the ordinary form of the species, but with the lower parts of the lateral branchlets and lesser spray on the upper surface of the branches of a light yellow colour, and the tips bright green.

It is a very striking variety, particularly in the spring and summer-time, and was raised in the nursery of Messrs. Veiteh and Sons, at Coombe Wood, in Surrey.
Retinospora obtusa nana aurei, Veitch, the Dwarf Golden Japan Cypress.
This kind forms a dwarf dense bush, with numerous small, spreading, thiekly-placed, flat variegated bramehlets. It is one of the finest and most constant of the light-yellow variegated raricties, and was introduced from Japan by the late Mr. John Gould Veitch.

Retinospora pisifera erecta, Hort., the Ereet, Pea-fruited Japan Cypress.
Syn. Retinospora strieta, Hort.
This is a compact, free-growing variety, of upright habit, and fohiage of a pale green colour.

A niee, distinct variety.
Retivospora fisifera ciracilis, IIort., the Slender, Pea-fruited Japan Cypress.
This variety very much resembles the ordinary form of the speeies, but differs in having the branehlets and smaller spray much slenderer, and of a brighter green colour.
Retinuspora pisifera nana autiea, Mort., the Dwarf Golden, Pea-fruited Japan Cypress.
This kind forms a dense, little, miniature bush, with a bluishgrey aspect, and a portion of the lesser branchlets of a pale yellow colour. It is a singular little plant, of slow growth, with the green branchlets on the under side quite glaucous.

Retinospora plumosa alba variecita, Hort., the White Variegated Plume Japan Cypress.
This is a charming variety, with bluish-gray foliage, distinctly and benutifully variegated with clear white spots, which gives the plant the appearance of being covered with small snow-flakes throughout the year.

Rethospora plumesa atbea proma.a, Mort., the Little Golden Plume Japan Cypress.
This is a very neat, dwarf variety, which differs principally from the plumosia aurea, in being very much dwarfer aml smaller in all its parts.

It is an clegrant little plant, with all the ends of the young growth of a beautiful golden colour, cluring the spring and summer months.

Retinospora plemosa flavesifas, Crippr, the Yellowish Plume Japan ('ypress.
This is a nice pale form of the plumnea aurea, with the ends of the young shoots of a greenish-yellow colour.

> Retinospora tetrisoona, Buerom, the Square-brauchletted Japan C'ypress. Syu. Chamacyparis thujaformis, R. Smith.
This kind forms a dwarf, compact, slow-growing shrub, of a remarkably bright-green colour; the secondary branchlets and small spray are short, crowded, four-silled, and of a very-hright green; the leaves are ovate, a little pointed, closely and regularly imbricated, in four rows, and of a beautiful bright ghssy green colour.

A very distinct kind, recently obtained from Japan by Mr. Barron, of the Elvaston Nursery, and Mr. R. Smith, of Worcester, amt of which Mr. Parron has a nice variegated form, with a portion of the lesser branchlets of a rich gelden colour.

Sequola sempervineas Lawsoniani, Ifort., Lawson's C'alifornian Redwood.
This is a distinet varicty, with much shorter and stouter leaves, and a more rigid halit of growth than the original species.

It originated in Messrs. Lawson's nursery, at Edinburgh.
Taxus baccata Eluastoneasis, Bumom, the Golden Elvaston Yew.
This is a distinct variety, with the leaves on the younger parts of the plant of a bright orange colour. It is not a varicgated form, but a self-coloured one, and by far the most brilliant of any of the golden varicties in the winter time. It originated at Elvaston Castle, in Derbyshire.

Taxus biccata variegata Barnoni, Barron, Mr. Barron's Yariegated Yew.
This is a fomale variety, raised at Elvaston Castle from a seerl of the old golden yew. It is very symmetrical in habit, forming a perfect pyramid, and is of much freer growth and brighter in colour than the parent plant, and, being a fruitbearing variety, is very desiriable.

Taxus Canadeasis variegata, Ifort., the Variegated Canadian Yew.

This varicty has all the leaves at the ends of the young shoots, of a whitish culour, and those lower down more or less margined with white; but when the leaves are fully matured, they assume the usual dull green of the speeies.

Thuja gigantea atrovireas, Hort, the Dark Green Giant Arbor-Vite.

> Syn. Thuja Lobbii atrovirens, R. Smith.

This is a fine robust variety, of a very dark, glossy, green
colour, with spreading branches, and open, hroad, flat, branchlets.

A fine distinct variety:
Theja gigante. pemila, Mort., the Smaller Giant ArborVitie.

Syn. Thuja Lobbii pumila, R. Smith.
", ", dittusa, $R$. Simith.
This variety is more difinse in its habit than the species, and much smaller in all its parts; the bramehlets also are much cluser net along the branches, and of a brighter green.

A sice distinct variety:
Theda Occidextalis amba, Mrnmell, the Queen Victoria, Anerican Arbor- - ${ }^{\text {itate }}$.
This is a pretty variety, with the tips of the young branchlets of a silvery-white colum in the spring and early part of summer.

It is an American production.
Tilisa Ocidentais armea, Musuell, the George Peabody, American Arhor-Vitae.
This is a very nice, brimht, goldan, self-enloured variety, recently introduced from the mursery of Messis. Maxwell of Geneva, New Vork.

## Thusa Ocidbextalis miracilis, Inm. Scoft.

This is a tall, loose-growing variety; with long, sleniler branches, which droop regularly on all sides, the branchlets are open, rather thinly placed, and furnished with longish, slender. bright-green laterals.
A. nice distinct kind which originated in Mr. Scott's nursery, at Merriutt.

The Theds pheicata pendelat of the nurseries, is the same as Thuja Occidentalis pendula.

## ERRATA.

Page 4 for Alcocsciana, read Alcoquiana.
," 11 and 27 for Jessocnsis, real Jezoensis.
", loline 5 from the top. for beak, read back.
", is ", 9 ," ," for exculia, read cerrulea.
", 103 ", 13 ", ", for Arthrotaxus, reul Arthrotaxis.
", 113 ", 18 ", ", for dusky, rad wide.
", 137 top line for"ohlongata, reul oblonga.
", 183 line 24 from the top, for adpressed, read plaeed.

## SISTEMATIC INDEX.

Genera are mdicated by Capitals, Species by small Roman type, Synonyas by Italices. The names aippended rither to Genera or Species denote the muthonitiss for them; and where the word Hort. orcurs as an cuthorit!, it sitnifies that the name is one curncentionally aldapled by llarticulter ists.

1) LGEIBIES, Linncurs
Ajunensis, Lindley1
18ulba, Miller
alba, Jichutex ..... :$\because!$., erverelea, Hort.
4
-, echimoformis, Hrit. ..... 4
" glatuca, Plumbt! ..... 4
, minima, Ǩriỵlet ..... 4
nana, Loulone ..... $+$
m'ustruter, Hort ..... 1
Atbertiture, Jurray ..... 2)
Alcoquiana, Veitelo ..... 4
amul,ilis, Lindley ..... 213
Apolliai, Link. ..... 117
Ararami, Lomidon ..... $\therefore 2$
Aratconn: Poiret ..... 31
Arction, Cumningham ..... 17
argenten, De Chanbr- ..... $: 113$
Allututict, Lindley ..... (1)
Sinborensis, Cosson ..... 220
Lalsum.u, Miller ..... श1,
" Frusri, ipach. ..... 205
" tongifotir. Endlicher201
:• mostratu, Kinimtere
" rarie hatu, Hort. ..... $2(1)$
balsamifien, Michaur ..... $2(1)$
hificta, Siebold ..... 2)!
brachyydeyllit, Maximo ..... 2(1)
bracteatio. Honker ..... 
Pridysia, Kellorio ..... $\because!$
Brunoui.una, İindle. ..... 21
C'slifornion, Dun ..... 21
Canadensis, 1/ichuni. ..... $\because$
" abla suica, Burima. 1-1
" gracilis, Hic- terロ・…..... -3
: mictuphullue,Hort. ......... :th
; Milfurlenais, $Y_{t}+1$ ! 1 …. . 421
ABIESr. $60:$
C'madensis, taxijolia, Cior- don ..... 29
carulican:, Fischer ..... 215
Carpetica, Hort ..... 6
celiondes, lirittith ..... 21
Culrus, l'inet ..... 65
('ophntari y, Joudion ..... 20.3
" Alcetlice, Henk ..... 197
, P'urmansic z. Hunk ..... 197
Chifroumesic, Murt ..... ~3;
Cili-ica, C'rriire ..... 21!
C'lendrasitienm, Lond an ..... 7
comulea, Loddisuas ..... 1.8
('olumberice. 1) es funt ..... 3.$)$
 ..... ©
" per lutro. lins ..... 11
enminutat 3 , I' irlat .. ..... 5
concolor. Lindley ..... 21;
currifulur. Buoth ..... :;
Inmmatra, l'uiret ..... 111
decieluer. Wrallich ..... g 1
denest, (iritlith ..... 22 2
dentiendutt. Poiret ..... 13
Inciove limiliy ..... (i)
fir if 'fie, Hort. ..... 32
Hot lasii /, dey ..... 24
brectbinetwle Autoine ..... 25
fat ti inta, himht 2 ..... 25
Hicimmer. Hirt-
wer ..... 20
penciula, I'culu- tri. ..... 27
" Sturii, Ilo..... ..... 27 ..... 27(ive), ….. - iftavifolia, Lom-dise25
Drammondii, Huit. ..... 20
diumosa, Lourlun ..... 21
elegans. Smith ..... 8
Eingulmannii, Parry ..... T.
ABIES．
Pante
pecinata Apollinis，End－licher197
leiorladre，Link． ..... 203
prostrotu，Il ort． ..... 211
pyrumielalis．
Carrière ..... 211）
strictu，Carrme ..... 211
Pelujumnesinct，GermanGardens．197
pendele，Lindles ..... 17
paselulu，Griftith ..... 19
Picea，Miller ..... ©
＂Lindley ..... 219
$\because$ leioctuln，Lindly ..... 208
Pichlet，Fischer ..... 221
＂＂Ille Hent． ..... 214
$\because$ Firckeri，Loudun ..... $21!$
Pineliou，Spach ..... 2
Pinsur，Buissier ..... $\because 24$
＂Duturentie，（＇ar－ riere ..... $\because 20$
＂voriegata，（＇arritre ..... 2
politil，Siehohel ..... 16
minita，Hort． ..... $i$
15imeitalie，llort． ..... 10
＂Mrtensis．Car－ rime ..... 211
Regina Amali r．Whalreich 197
Rinzi，Hort ..... $\because 1 \pm$
religiose，Lindley ..... 212
rubra，Puivet． ..... 17
－A潼位．Hort． ..... 17
＂Catimonira，Hort． ..... 17
＂．cerilea，Lond a ..... 14
－rislucri，Loudun ..... 18
Hetiost．Hort．
6
6
Schrenkimta，Kivallon ..... 19
stibivica，Lexlebour ..... セ21
sibivico，Fisther ..... 12
211
Sitchursiv，Lindley ..... 1：2
Smithiana．Lovelo， ..... $1!$
spectorbilix，simach ..... $\because 6$
striuruluser，（irillith
$1!$
$1!$

111
111
tarifulia，1）rummond
$\therefore$
$\therefore$
（uatuli＇Jeffrey
$\because 9$
$\because 9$
tucimati，Deiforit
$24!$
$24!$
Thchuthtsthon，Lawson
211
211
Thurubrrijiz，Lambert .....
16 .....
16
Trajulratucla，Roezl
Trajulratucla，Roezl
$21: 3$
$21: 3$
Tarim．．Si bode ..... 16
ABIES．
Tsuga，Siebold ..... 32,421
，＂．nana，sielonid ..... 3：3
Feitcciii，Liudley ..... 226
riminalis，Alstriemer ..... 10
vulramis，Poiret ..... $20!$
II ebbiann，Liudlry ..... $221 ;$
＂fleri，Hort． ..... 2
Mïlliamsanii，Newberry ..... B11
＂ilemanniance，Hartwess ..... 15
HTINOSTROBUS，Miquel． ..... ：3
．．acuminatat，Perlutupe ..... 21
If uthis Austreties，salisbury ..... $3 \pm$
＂Dremmurer，lichard ..... 111
$\because$ In，＂thif，iti，Salisbury ..... 111
14taint＊）（＇u）thso ..... $111!$
 ..... 41
－．Trelser，Ludo：1 ..... 40
tme riechuss rigutntras． 11 ．．ivk． ..... 415
．11．1U（＇．\RIL．． 7 ussi＂ ..... 3
Midwilli，Ifouker． ..... 36
Brasiliensis，lidictal ..... 37
－gracitio，Ćarotro ..... ：
．．Itidoltiana，str＂i ..... B
Navi：ma，I＇trlut ，me ..... $3!$
Chitenis，Mirbel ..... $3: 3$
rolamtratis．Hooker ..... 49
Corkii，K．DRU＇N ..... $4:$
（＇unuiughamıj，Aiton ..... 11
＂glanca， 1 ün ..... 45
tongifolia．Ant ine ..... 45
U．mi，yi．Hichard ..... 2
el arats，Kinimht ..... उर
excelsa，$l$ ．liruzme ..... 4.
．－specioxi ima．Ilont．
Puris ..... 421
，raricgata，IIurt． ..... 46
ulueriv，Loldics ..... 4.5
grorilis，Vinn Iloutte ..... 33
umbricata，I＇u ro ？ ..... 3
－＂varicaa：a，／／or\％ ..... 42
intomemetro．Viuntard ..... $1: 3$
limecriluta．IIort． ..... $\because$
Lindfforait．Van Hurtte
3. 
4. 

Rikbinans．Italian（ianl ne： ..... ：
liidulfi，Hurt． ..... ：3
Mulei，MI ueller ..... 42
Saviuns，Parlatore ..... $3!$
subreleta．Vicillir： ..... 4
－1RBOR ITYE，see TIIUJA．
Ir reculhos diujatica，Antuine． ..... 133
MPTIROTALLS，Dın ..... 46
. IPTHROTAXIS.
Alpina, Van Houtto ..... 48
araucarioides, Brongniart 103cupressoides, Don47
Doniana, Maulc ..... 48
Domiana, Parker ..... 48
Gumniana, Mooke, ..... 47
imbricata, Maulc ..... 47
laxifolia, Hooker ..... 48
selaginoides, Don ..... 48
tetragona, Hooker ..... 184
Belis juculifoliu, Salisbury ..... 77
lanceolata, Swect ..... 77
BÏOTA, Don ..... 49
Coraana, Siebold ..... 53
excelsa, Hort. ..... 55
Fiortunci, Hort. ..... 54
frencloides, Belgian Gardens ..... 52
funiculata, Hort ..... 52
gracilifolia, Knight ..... 52
Japonica, Sicbold ..... 53
Japonica laxa, Scott ..... 422
macrocarpa, IIort. ..... 422
Meldensis, Lawson ..... 57
D'epratensis, Endlicher ..... 52
Orientalis, Don ..... j0

argenten, 11 ort.
arthrotaxoides, ..... 51 arthrotaxoides,
IIort. ...........
Mort. ..... 51
Ascotensis, Mort. 422
aurea, $110 \%$. ..... 50
", nana, Hort. ..... 51
compacta, Hort. ..... 53
elegantissima,licllisscn ...... 53
excelsa, Hort.... ..... 55
falcata, Lindley. ..... 54
funiculata, Ilowt. ..... 52
glanca, Pince ... ..... 52
gracilis, Corviere 5:incurvala, Knight 53inacrocarpa, Hort. 422monstrosin, C'ar-racre …......... 52
nana, Carrière.. ..... 53
Pekinensis, (for- don............... 54 ..... 54pendala, Parli-tore $\ldots . . . . . . .$.pyramidalis, End-licher ............. 55scmper-aurescens,Lempine......... 422

## BIOTA.

Oricutalis Sieboldii, Endlicher............ 53 stricta, Loudon. 5 5 Tatarica, Endlicher............ 400 triangularis, flort. ......... 5 J
variegata, lunclicher... ăl anrea, Carriere 51
pendula, Endlicher ..... 55
prostrata. Hort. ..... 401
pyramidalis, Carrière ..... 403
pumila, Curricre. ..... 50
Tatarica, Loudon ..... 109
IFarcana, Hort ..... 409
IV"areana, Hort. ..... 409
Zuccariniana, /Iort. ..... 422
CALLITRIS, I'entenat ..... 57
arborea, Schrader ..... 418
arenosa, Swcet ..... 117
articulata, Pinct-Woburn ..... 117
Austrulis, Hooker ..... 117
calcarala, R. Brown ..... 117
Capensis, Schrader ..... 417
cuncessiformis, Vcntenat ..... 117
curnessoides, Sclurader ..... 417
Follerigilli, Loudon ..... 119
fruticosa, M. Brown. ..... 11!
glauca, K. Brown ..... 123
G'unnii, Hooker
G'unnii, Hooker ..... 120 ..... 120
Hugclii, Knight ..... 121
macrostrachya, Hort. ..... 120
oblonga, Richard ..... 120
Preissii, Miquel ..... 123
propinqua, R. Brown ..... 123
mpramidalis, Sweet ..... 123
quadrivalvis, Ventcnat ..... 5,
rhomboidea, R. Brown ..... 117
robustu, li. Brown ..... 12:3
stricta, Schrader ..... 417
tubcrculata, R. Prown ..... 125
vervucosa, Cummingham ..... 125
Caryoterns mucifera, Zucea- rini ..... 411
grandis, Hort. ..... 70
CEULUU', Link: ..... 59
Africana, Gordon ..... 60
argentea, Loudon ..... 60
Atlantica, Manettr ..... 60
Dcodara, Louton. ..... 61
CEDRUS.
Deodora alba spica, Hort..PAOE
CHAMECYPARIS.
sphreroidea nana, Endlicher 72
variegata, Vn ..... ,
squarrose, Entlicher ..... 3.1
" Leptocledra, Endlicher ..... 305
., $\begin{aligned} \text { rati I Itr, Endlicher }\end{aligned}$ ..... 372
thuirfrirmis. R. Smith ..... 420
thurifera, Endlicher ..... 100
Chamepreves ublest, Zucearini ..... 367
COLU.MBE.A, N'atishtry ..... 35
quวi, ijaria, , alisuury ..... 39
Cotymh - Sali-bury ..... 36
Liviuilli, Carrire ..... 3
anyustiolit, Hertoloni ..... 37
Brusilu nsis, Carrère. . $37-$ ..... 39
imbricat=, Carričro ..... 39
pxeler, Sprengel ..... 45
Condyोलctrutes sempervivens, Salisbury ..... 37
CRYPTOMETR 1 , Don ..... 73
elegans, lritch ..... 7
armeilis, Hort ..... 7.3
Japonica, /1m ..... 7
„, arancarioites, Hurt. ..... 7
" etriothe, Hort ..... 73
„. clourvili. liegel ..... 73
$\because$ Lobbii. Ilort ..... 76

- natra, lortun ..... 76
- mumtrt, Lomdon. ..... 76
" suirali, Hort. ..... 423

3) rarie fata, /Hort. ..... $7 i$
vera. A"ichotel ..... 4:2?
veridix, Hort ..... 7
nam, Lindley ..... 76
viritix. Mort. ..... 76
CUNNIN(SHAMIA, K.
firuten ..... 76
cupressodids. Zuccarini ..... 47
Lanceotater, Vin Hontte. ..... 77
selaginoid ; 7uccarini ..... 49
Sinensis, 1\%. Brown ..... 71
glanca, //o ..... 77
CUPRESUS', Tomemfort ..... is
Afrieana, Miller ..... 418
Americturt, Cate liy ..... :3~2
Americrent, 'Trantretter. ..... ! 1
 ..... (1) 3
aromatica, Van Houtte ..... $8:$
attemmata, Gioulon ..... $7!$
Australi: I'ersuon ..... 1115
Australis, Low ..... 1112
bacciformis, Willdenow ..... 164
bacciformis, Knight ..... 163
CUPIEESUS.
Balfouriana, Lemoine ..... 79Page
bambustcea. Olotane=ins.
Benthami, Endlicher ..... 80188
Bourgeauii, Hort. ..... 79Californica, Hort.
82
Cashmeriana, Royle ..... 97
cermua, Hort. ..... 80
Cheusanensis, Pluknet ..... 74
Chitensis, Gillies ..... 180
columneris, Forster ..... 43
Corneyana, Kouight ..... 80
Coulleri, Forbes ..... 84
disticha, Linnreus ..... :382
" mutans, Aitun ..... 385
". pulens, $\Lambda$ iton ..... 382
Doniana, Hort. ..... 102
plegans, Low ..... 84
cricoides, Hort. ..... 3(i.3
excelsa, Scatl ..... 82
expansa, Audibert ..... 96
fastigiata, D. (!. ..... 0.3
: horizontalis, D. C. ..... 90
" thujcefolia, Hort ..... 97
" variegala, Hort. ..... 97
nliformis, Hort. ..... 5
jicmina, Crsalpini ..... 95
l'othergilli, Pinct-W Wburn 119
funcbris, Enullicher: ..... 82
glauca, Lamarck ..... 89
" Iristis, Carrière ..... 89
" pendiuta, IIort. ..... 89
ylandulosa, Hooker. ..... 90
Goensis, Hort. ..... 89
Goveniana, Goidon ..... 83
B glate ..... 124
gracilis, Hort ..... 80
Hartwegio, Carrière ..... 91
horizontalis. Duhamel ..... 96
imbricata, Nuttnll ..... 383
Japonica, Thunberg ..... 74
juniperoides, Linnieu ..... 418
ľewensis, Hort ..... 82
Knightiana, Perry ..... 84
variegita, 11 orl. ..... 85
Lambertiana, Gordon ..... 91
fastiniata, Cirrière 91
Lawsoniana. Muray ..... 85
aromitutica, Hort... ..... 88
3

     alba spica, \(110 \%\). 87, 424
     alba spica nana,
                     Hor .... 424
    ", alba variegata,
" alba vatuón87

## CUPRESSUS.

Lawsoniana, argentea, /hort. s:
., aurca, Wherer. ..... 87
" cerulca, $/ 1 / m$ ..... 42.1
elegantissima, Bar.

$$
\text { ron ... } 424
$$

$$
\text { erecta, IIort. ..... } 87
$$

crecta, viridis, $A$. Waterer... 425
fragrans, Standish ..... 88
rlanear nuna, Hort. ..... 88
sracilis, /Iori ..... 88
lutea, liolli:son ..... 88
" flavescens, Cripps ..... 88
minima, llort. ..... 89
nama, Horl ..... 88
pendula alba, L'aul. ..... 89
pumila, Hort. ..... 88
pyymare, Hort. ..... 89
pyramidalis, Hort. ..... 87
stricta, Hort. ..... 87
viridis, Hort ..... 87
Lil,ani glauca, Knight ... ..... 89
Lindleyi, Klotsch ..... 84
: argentea varie- gula, Hort. ..... 85
Lnsitanica, Miller ..... 89
elegans, Rinz ..... 89
" palulu, Tourne- fort ..... 89
penclula, Hort. ..... 89
variegata, Lareson ..... $9!$
Mac-Nabiana, Murray ..... 90
macrocarpa, Martueg. ..... 91
fiustigiata,Knight ..... 91
Crippsi, Hort. ..... 93
Hagelliformis, Cripps ..... 9\%
varicgata, IIor . . ..... 93
macrostachya, Hort. ..... 120
majestica, Knight ..... 100
mas, Cousalpin ..... 96
nana, Hort ..... 73
M(aricunca,. Plukn ..... 71
Nepalensis, Loudon ..... 97
nivea, Lobb ..... 79
nucifira, Hort ..... 126
Nutkacnsis, Ilooker ..... 94
argented, Hort ..... 35
, aurea varicgata, Young ..... 425
compacta, Horl. . ..... 425
" glauea, Hort. ..... 426
CUPRESSUS.
PA!?
Nutkaensis variegata. Ilort. 35
Noorkatensis, Lambert ..... 34
Orientalis, Hort. ..... 96
patula, Pernoon ..... 35
pendela, Thunberó ..... 55
pendulte, Hort. ..... 82
pendula, Heritier ..... 89
pendula, Griftith ..... 97
pendula, Stnunton ..... Sl
pentutatre, Hort. ..... 50
pyramidalis, Tuzzett ..... 95
Picinutardiii, Hort. ..... 91
religiosa nana, Hort. ..... I(K)
Finytei, ( Yarritre ..... $10: 3$
S'ulinoides, Humboldt ..... 161
Schombnrikii, Van IIoutte ..... 110
sempervirens, Linneus ..... 0.5
" horizontalis, Miller ..... 36
" Indiea, E. I. Cmpy: ..... 102
" monstrosa, $/$ /or ..... 97
-, thenju folim, Carriere ..... 97
.. varieinata, Knight ..... 97

- Imensix, Lee ..... $\therefore 3$
Simensis, Ilurt. ..... 126
" glaner, Van Houts ..... 83
n pendils. Hurt. ..... 4
Skinnerii, Hurt ..... $\therefore 2$
spharvi lea pentule, Hort. ..... 72
" Kiowensis, Kuight ..... 72
squarrose. Lawson ..... 371
stricta, Miller ..... 95
T'chugratskinyse, Hort. ..... !
Letragona, Hort. ..... (1(K)
Thujo, Targ-Tozz ..... 50
thujef formia, Parker ..... 97
thnjowides, Jow ..... 9
thurufera. Mumboldt ..... (1(x)
thurifera, Bentham ..... 81
- elegtans, Hort. ..... $8 t$
" Kimightirntr. (inordon ..... 84
thyoide, D'avon ..... 180
thynil-, Linnaus ..... 7
- atrovirms, Lawson ..... -9
" K"cwensis, Hart ..... 72
" naner. Luudon ..... 72
rasregata, Loudon ..... 72
torulosa, Don ..... 97
- elegans. Hort. ..... 100
, majestica, IIort ..... 100
, nana, Ifort. ..... 100
" reliminsm, Knight.. ..... 100
" viridis, flort. ..... 100
CUPRESSUS.
Tournejortii, Audibert ..... 95
Chuleana, Gordon ..... 100
variegata, Hort. ..... 72
Virginiana, Plukenet ..... 382
Tradescanti, Ray ..... 382
Whitleyana, Hort. ..... 102
D.ICRYDIUM, Solander ..... 103
araucarioides, Brongriart ..... 103
wthrotawoides, Carriére. ..... 103
Beecarii, Perlotore. ..... 103
('olensoi, Hooker: ..... 104
empressinum, Solunder. ..... 104
di.tichnm, Don ..... 355
clatum, IF allich ..... 105
" compactum, Carriere ..... 359
"tenuifotium, Carricre ..... 359
excelsum, Don ..... 357
jerrusfineum, Van Houtte ..... 357
Franklinii, Hooker. ..... 106
Lincley ..... 18.4
Huonense, Cunningham. ..... 106
Jnnghuhnï. Miquel ..... 105
Kirkii, Mueller ..... 107
laxifolium, Hooker ..... 107
Lobbiv, Hort. ..... 10.4
Mai, Cunningham ..... 354
Mayi, Van Houtte ..... $3 \cdot 5$
plumosum, Don ..... $15: 2$
pricatum, Hort ..... 350
icrijolium, Banks ..... $35!$
taxoides, Brongiart ..... 107
tenuifolium, Parlatore ..... 359
fetragonnem, Parlatore ..... 184
thuioides, Solander ..... 35
$u$ stum, Vieillard ..... 358
Vicillardii, Parlatore. ..... 358
DAMMARA, livmplius ..... 1ns
alba, Rumphius ..... 111
alba, Makoy ..... 112
Australis, Lambert ..... 108
glauca, Lom ..... 109
brevijolin, Hort ..... 109
Bidurilli, Hort. ..... 113
lironemii, Hort. ..... 113
hypoleuca, Ifort. ..... 109
longifolin, Lindley ..... 113
loranthifolia, Spach ..... 111
maerophylla, Lindley ..... 110
Mooris, Lindley ..... 110
obtusa, Lindley ..... 110
ovata, Moore ..... 112
DAMITARA. PAGE
Oricutalis, Lambert ..... 111
" alba, Krnight
" palleus, Carrière ..... 112 ..... 112
pinnata, Parmentier ..... 18!)
robusta, Moove. ..... 113
liumpliui, Presl ..... 111
Vitiensis, Seemame ..... 113
DISLELMA, I. llooker ..... 11.1
Areheri, J. Hooker ..... 114
Dombeya Ar"ueana, leouschel ..... 33
Chilsensis, Iamarek ..... 39
eacelsa, Lambert ..... 45
EUT'AC'TA, Link ..... 43
Cookii, Carrière ..... 43
Cunninghamii, Link ..... 4.4
excelsa, Link ..... 45
minor, Carrière ..... 43
Mutlleri, Carrière ..... 42
Puncheri, Carrière ..... 43
Rulei, Varlot ..... 42
, jolymorphu, Carrière ..... 42
Ertetcsst Cunnizghtumii, Spach ..... 44
heterophylla, Salisbury ..... 45
FITV-ROYA, Hooker. ..... 115
Patagoniea, Ilooker ..... 115
FRENELA, Mfirbet ..... 116
arellosa, Hort. ..... 117
Australis, Ifooker ..... 117
li. Brown ..... 121
Austratis, Encllieher ..... 119
ealearata, Cumningham ..... 117
canescens, Parlatore ..... 118
columellaris, Aneller. ..... 118
crassivalvis, 11 iquel ..... 123
Drunımondii, Parlatore ..... 118
Endlieheri, Parlatorc. ..... 110
ericoides, Endlieher. ..... 117
Fontanesic, Mirbel ..... 58
Fothergilli, Endlicher ..... 119
fruticosa, Endlicher ..... 119
rlanca, Mirbel ..... $120-123$
Gulielini, Pastatore ..... 119
Gunnii, Findlicher ..... 120
IIugelii, Carrière ..... 121
Maeleyana, Palatore ..... 121
macrostuchya, Knight ..... 120
Moorii, Parlatore ..... 122
Mnelleri, Parlatore ..... 122
Parlatorei, Mueller. ..... 122
propinqua, Cumaingham ..... 123
pyramidalis, Carrère. ..... 123
jhomboidea, Endlicher ..... 117
FRENELA.
rigida, Endlicher. ..... 123
robusta, Cumninghain ..... 123
Roci, Eindlichor ..... 124
subeordata, Parlatore. ..... 124
subumbellata, Parlatore ..... 124
sulenta, P'arlatore ..... 124
triquetra, Spach ..... 117
tubereulata, Mirbel ..... 125
variabilis, Carriere. ..... 120
Ventenatii, Mirbel ..... 117
verrncosa, Cunningham ..... 12.5
Ginligo biloba, Linneus ..... 374
laciniata, Hort. ..... 375
GLYPTOS'STROBUS, E'ndlicher 126
heterophyllus, Endlicher. ..... 126
Hor:fieldii, Knight. ..... 356
pendulus, Endlicher ..... 385
JUNIPERUS, Linnaers ..... 127
alba, Knight ..... 102
Alpina, Loddiges ..... 146
Alpina, Clusius ..... 136
" minor, Booth ..... 136
". Suecica, Plukenet... ..... 136
Audina, Nuttall ..... 162
aquatica, Roxburgh ..... 126
arborescens, Mœnelı ..... $15 \pm$
argentea, Hort. ..... 156
aromatica, Hort. ..... 82
Attica, Heldrieeh. ..... 135
bacciformis, Carricire ..... 164
Knight. ..... 163
Barbadensis, Michaux ..... 155
Linnæus
140
140
Redfördiana, Kniglit ..... 155
Bermndiana, Limnces ..... 140
Biassolettri, Link ..... 135
brevifolia, l'arlatore. ..... 130
Califorma, Carrière ..... 162
Cauadensis, Loddiges. ..... 129
Canariensis, Knight ..... 129
canescens, E. I. Company ..... 147
Capensis, Lamarek. ..... 418
Caroliniana, Du Roi ..... 155
Hort. ..... 154
Caucasice, Fiseher ..... 137
casia, Currère. ..... 167
Cedrus, Webb ..... 129
: brevifolia, Gordon ..... 130
", Bermudu, Ray ..... 140
сетинa, Roxburgh ..... 155
Cerrosianus, Kcllogg ..... 167
Chinensis, loxburgh ..... 330
JUNIPERUS PACS
Chinensis Limazus. ..... 158
JUNIPERUS ..... PASt
? argentea. Hort. ..... 53
arrea, Young ..... 4215
" densata, Ri. Snith 1.59
Corneyzana, Gor-don81
focmina, Linneuus ..... 1.8
Leeana, If(n)t ..... $4 \div 6$
inis, Linnaus. ..... 153
min umbens, Findlicher100
Smithei, Loudon ..... 165
varichati, for.lune159
rinerta, Carricre ..... 351
communis, Linnreus ..... 133
Thunberg ..... 138
Alminn, Wah- Tenberg ... .. 136
Caucusica, lind-licher137
compressa, (ar- rière ..... 133
Cracovia, Sost- diges ... .. . 1:3
dry ressa, Pursh 1:?fustigiata, Lou-don.132
hemicyhariou, Parlatore ..... $13!$
Hibernica, Loul-digrs132
IHispanice, Law-son13.3
Indica, Madden 14:" Alpina,Winter.bottom.. 1.42, nevarMaduen 142
macrocarian,Spach135
Montan , diton 136
narua, Loudon. 13oblonya, Lou-
don. ..... 137
prnelula, Hort ..... 132
st infa, C'arrière ..... 132
Suecica, Lou-don ........... 132
don.132

vellyuris, Lou-
vulgutris, Lou-don1.31
communis, Tritsmannana, Carrierc ..... 133
compressa, linz ..... 13:3
conferta, Purtutore ..... 13:3
Cornejarar, Hort ..... 8]
Cunnennhami, IIort. ..... 117
cupressijulia, Jort. ..... 150
Davurica, I'ulless ..... $1.1]$
129
dealb̆rte, Lurt.... ..... 162
Donglas ..... 129
densa, Gordom ..... 141
Deppeate. Steudel ..... 161
dejressare, Bouth ..... 129
demorpha, Roxburis ..... 155
diceciz, Makoy ..... lis
drupacea. Letitl ..... 13:3
dumosa, Wallich ..... 152
Hort. ..... 156
echinofnrmis, Rinz ..... 131
clatu, Roxburgh ..... 105
elegani, Hort. ..... 150
ellijuica, Vrn Houtte ..... 13.5
ericoider: Noisetto ..... 117
Hort
363
363
uxcelsa, Ihintrit ..... 143
" Madulen ..... 148
" Lervis ..... 162
" glauca, Hort ..... 144
" morera, Carric̀re ..... 162
" stricta, liollisson ..... 144
:- variegata, $I$ ort. ..... 144
vere. Hort
$11: 3$
$11: 3$
fust rinte, knight ..... 132
flacci-in, schterten ..... 145
fay lliformir, liceres ..... 158
fumina, Hort. ..... 159
futida.Sabinc: Spach ..... 150
" Dantriey, Spach ..... 141
- excelsa, Spach ..... 113
farecida, Sprach ..... 145
IIispanica, Spach.. ..... 153
mullictulis, Spach. ..... 146
lamariscijolia,
Spach ..... 151
Fortunii, IIort ..... 165
fragrans, Knight ..... $16: 2$
gigrentea, Roczl ..... 161
gluuca, Willdenow
150
150
Gosscinthanea, Loddiges ..... 155
gracilis, Endlicher ..... 14581
JUNIPERUS.
hemisphærica, Picsl. ..... 134PACL:
IIermami, Persoon ..... 162
IIibernuca, Lodrliges
", compres*a, Hort ..... 133
IIispanica, Presl ..... 133
Willer ..... 153
forizontalis, Hoench ..... 146
Hudsonica, Loddiges ..... 146
incurva, Hamilton ..... $1: 17$
interrupta, Wendland ..... 137
isophyllos, Kotschy ..... 143
Japonica, Carripre ..... 160
\# alba,Standisl ..... 161
" aurca, fortenc. ..... 160
Lambertiana, Wallich ..... 152
Langoldiana, Hort ..... 164
Lasdcliana, Lawsm ..... 162
latijolia arborea, Tourne- fort ..... 133
littoralis, Maximo ..... 133
Lobelii, Gussone ..... $1: 35$
Lusitanica, Miller ..... 150
Lycia, Pallas ..... 150
", Limæus ..... 165
Mac-Nabicena, Lawson ..... 90
macrocarpa, Sibthorz ..... $1: 35$
major, Bellonius ..... 133
" Americance, Park- inson ..... 154
bacea-ccerulea, Tour- nefort ..... 135
maximus, Lobel ..... 135
Mexicana, Schlect ..... 161
minor, Fuchs ..... 131
" montana: Bauhin ..... 136
Monspeliensium, Lobel ..... 137
ninna, Willdenow ..... 130
" Alpina, Endlicher ..... 136
" hemispharica, Car- rière ..... 134
montana, Endlicher ..... 129
ncaboricnsis, Lawson ..... 135
depalcnsis, finz ..... 147
oblonga, Loudon ..... 137
" nendula, Loudon ..... 139
oblongata, Gussone ..... 135
Occidcntalis, Hooker ..... 162
Olivien ", Carriere .....
oophora, K unze ..... 15
opmositifolia, Mœnch ..... 140
Oxycedrus, Linnaus ..... 137
JUNIPERUS.Oxycedrus, Ererifolia,Hochst ...... 130eehinoformis,Van Houtte 134Phenicer, Do-don137
Taurica, Hort. ..... 138
Wittmanniena,Hort139
pachyphlxa, Torrey ..... 164
pendula vera, Hort ..... 139
Perlinsii, Hort ..... 144
Philippsiance, Wallich ..... 10.5
Phœmicea, Linnceus. ..... 164
$\Rightarrow$ Lycia, Loudon. ..... 165
" malacocarpa,
Endlicher ..... 165
". selerocarpia,
Endlicher ..... $16 \pm$
plochyderma, I'orrey ..... 167
polycarpos, Kotschy ..... 143
procera, Hochst ..... 162
mocumbens, Siebold ..... 160
prostrata, Persoon ..... 146
prostrate, Risso ..... 150
Pscudo-Sabina, Fischer ..... 145
pyriformis, Lindley ..... 162
myraniudalis, Hort ..... 132
racemosa, Risso ..... 167
recurva, Don ..... 147
" densa, Hort. ..... 141
recurva sana, Hort. ..... 141
licevesiana, Hort ..... 158
religiosa, hoyle ..... 148
repanda, Hort ..... 147
repens, Nuttall ..... 146
rigida, Sieber ..... 105
rigida, Wallich ..... 152
rigida, Sicbold ..... 138
rigida, Noisette ..... 123
rigida, Pavon ..... 337
rufescens, Liinl: ..... 138
:, brevifolia, End-licher130
Sabina, Linnceus. ..... 150
, Alpina, Hort. ..... 151
cupressifolia, Aiton 150
elegans, Booth ..... 151
", excelsa, Antoine ..... 143
", horizontalis, Hort. ..... 150
", humilis, Hooker. ..... 146
" isophyllos, Antoine. ..... 143
IUNIPERUS． PAGL
Sabina nana，Hort．
＂J Itrompletra．Antoine 16 ..... 64
－pulyier pos，Antnine
＂，prosticutr．Loudon．．． ..... 146
＂，pumila，Hort ..... 150
＂，tamati－ifolin，Aiton 15
－T＇arritia．Pallas ..... 143
．，variegata，Losdon． ..... 1.1
vulyaris，Endlicher 1．51
Sibinoides，Pindlicher． ..... 151
suratilis，Pallas ..... 136
Schollii，Hort． ..... 134
Sherpardri，Hort． ..... 426
Sibirica，lurgsdorfi ..... 136
sp，now，Furtune ..... 167
spharlea．Lendey ..... 165
glattea，Fortun ..... 1 1i
समharocaitine，Antoine ..... 135
squamata．Dene ..... 1.2
＊quamoss，Hamilton ..... 1.2
stricte，Hort． ..... 1.4
Hort． ..... $1: 2$
struthiacor，にui－मt ..... 1.8
Succiru．Miller． ..... 132
＂I！ramictutie，Manetti ..... 13.3
Tतथम⿱亠䒑日心．Stralgway ..... 1：3
Laxifolis．Muobir， ..... $1:!$
tetragona，Sichlert ..... 166
setrationte．Manch ..... $10 t$ ..... $10:$
Thumbergii．Hooker
Thumbergii．Hooker ..... 1.5
thurifera．Linnerms． ..... 153
thetritert．Honglaud ..... 100
Hewrifiere，Harlatore ..... 1.5
tripartita，llort ..... 1.5
lubinata，Cusnone ..... 153
ambitiment，（irenier： ..... 133
 ..... 143
uenuster．Hurt． ..... 141，426
Virginiana，Linneus ..... 15.4
－atba variegata，／lort． ..... 1.57
．．aurea variegata．／fot $t$ ..... 1.57
9 Australay，Carricre．．．155
2 arymueri，Vian Houtte letCaroliniama，Lodeleges 1．5．5
81 Chamberlaikii．Hort．1．if
s， cinerescens，Hort ..... $15 \%$
 dumosa，Lodleliges．． ..... 156
＂glatuca，If， ..... 1513
＂，Iracilis．Hort． ..... 15.5
＂，bumilis，Hort． ..... 150
JINIPERUS． Pagl
Virginiana pendula，IIort． ..... 1.5
＂：，fœmina．II ..... 157 ..... 157
－viridis， ..... 157
mumaln．Hort ..... 15\％
Schottii，／Ior\％． ..... 157
sparsifulia，Hort． ..... 15.5
．，stricta，Hort． ..... $1 . \%$
strictu，Hort． ..... 15.5
tripartita，$I$ ．simil／ ..... 157
vera．Loddires ..... 154
vitide．Hort．
13
13
＂，ulyariv，（itrriete ..... 1．i4
valga，ix，Bauhin ..... 131
＂urbor u，Banhina ..... 132
＂．jruticuse，Juhamel ..... 131
，Jruteccose，C＇upan ..... $1: 34$
Hallichienta，llooker ..... 152
Wellechia，1Hort． ..... 159
II ehbil，（armiere ..... 129
IFilhomemii，－Lutoine ..... 135
H＂ittmanniunct：Fischer． ..... 139
Atlele ria l＇ortumei，Carrière ..... 27
i．MILIS，Link ..... 168
Altaicr，Fischer ..... 17：3
Anericanu，Michaux ..... 175
＂Urerifulia，C＇arriure ..... 176
－prendula，Loudon． ..... 177
ruliree，Loudon ..... 175
Arcluengrlicu，Iawson ..... 173
Cedrus，Miller ..... 65
commanis．L．awson ..... 169
Dalurica．Turczan ..... 169
a cidua，Miller． ..... 169
russicr，Henk． ..... 173
Eurupma．De（： ..... 169
．－alba，Eincllicher ..... 171
－Dakurica，Loudon ..... 165
．．Girselsallii，Loudon ..... 170
＂pendula，Loudon．． ..... 170
－repena，Itomudon ..... 170
＂．rubra，Lincllieher． ..... 171
＂Sibirica，J．oudon． ..... 173
evcelar，Link ..... 169
Proseri，liurtis ..... 17.5
（rimelini，Ledebour ..... 165
Girifithicina，Ifort ..... 171
Griftithii．Hooker． ..... 171
intrimedia．Lawson ..... 173
Juponica，Carricre ..... 173
liwmpjeri，Furtune ..... 360
Kamischatica，Carrière ..... 172
LARIX.
Ledebourii, liupp川 ..... 173PA!il:
leptolcpis, Siebold ..... 173
Lyallii, P'arlatore ..... 17
microcarpa, Hooker
nigra, Hort ..... 177
Nuttallii, Parlatore. ..... 176
Oceidentalis, A'uttall. ..... 1,6
Orientalis. 'Tournefort ..... (65
patula, Salisbury ..... 65
pendula, Salistury ..... 177
Pseudo-larir, Loddiges ..... 173
pyramiculis, Salisbury ..... 169
rossica, Sabine. ..... 173
Sibirict, Ledebour ..... 173
Sikkimensis, Hooker ..... 171
tenuifolia, Salisbury ..... 175
vulguris, Fischer ..... $16!$
Laurus julifera, Kæmpfer ..... 188
Leichardtire Macleana, Sliep- herd ..... 121
LEPIDOTHAMNUS, Phi-
limui ..... 178
Fonk1, Phitimi ..... 170
LIBOCEDRUS, lindlicher ..... 179
Chilensis, Endlicher. ..... 181
viridis, Mort.. ..... 181
Craigiana, Low ..... $1 \approx 1$
Doniana, Endlicher ..... 182
decurreus, I'orrey ..... 181
\# depressa. Sicott ..... 426
excelsa, Hort. ..... 181
gigantea, Low ..... 181
gigantea glauca, Lawson ..... 181
tetragona, Endlicher. ..... 183
Lignum emanum, Rum- phius ..... 346
Lycopodium arboreum, Jungh ..... 105
Maki-fotens, Kæmpfer ..... 340
MICROCACHRYS, Hooker... ..... 184
tetragona, J. Hooker ..... 184
tetrayona fomina, J. Hooker ..... 192
tetragona, Areher ..... 114
Micropeucc Sieboldii, Spach.. ..... 32
MIyrica N'agi, Thunberg ..... 188
NAGELA, G'artner ..... 185
Beccarii, Gorlon ..... 186
Blunci, Gordorn ..... 186
cuspidata, Gordon ..... 187
grandifolia, Gorclou ..... 187
Japonica, Gartner ..... 188

NAGEIA.
Japonica, variegata, Gordon ..... 189
Iatifolia, Gordon ..... 19.9
minor, Carrière ..... 191
ovata, Gordon ..... 190
variegata, Gurdon. ..... 191
Octoclinis Macleyara, Mueller ..... 131
ljackhousii, Hill
ljackhousii, Hill ..... 121 ..... 121
Pachylen is Commersoniu, Brongn. ..... 417
cumpessoides, Brongn ..... 417
jumiperoides, Brongu. ..... 418
Parolina juniperoides, End- licher ..... 418
Pence balsamea, Richard ..... 200
PHEROSPHERA, Archer ..... 102
Hookeriana, Archer ..... 192
PHYLLOCLADUS, Richard ..... 193
Alpina, Hooker ..... 193
aspilenijolia, Hooker ..... 194
Billardieriz, Mirbol ..... 194
glauea, Carviere ..... 105
hypophylla, Mouke. ..... 193
rhomboidalis, Richurd ..... 194
trichomanoides, Don ..... 195
„Alpina, Parlatore ..... 193
"glauea, Purlatorc
195
195
PICEA, Don ..... 196
Ajanensis, Fischer ..... 18
alba, Link. ..... 3
" echinoformis, Carrière ..... 4
„ nana, Link ..... 4
Alcockiana, Carrière ..... 4
amabilis, Lobb ..... 219
", Loutdon............ ..... 213
" magmizica, Ho ..... 219
219
poblinis, Pauch Apollinis, liauch. ..... 197
balsamea, Loudon ..... 200
" longifolia, Loudon ..... 201
", prostrata, Knight ..... 206
, rariegata, Kuright ..... 201
brachyphylla, Gordon. ..... 201
bracteata, Loudon ..... 202
Somoniana, Spach ..... 21
Californica, Carrière ..... 30
Canculcnsis, Link. ..... 22
Cephalonica, Loudon ..... 203
Ciliciea, Aprauth ..... 197
214
cinerca, Baumann ..... 211carulea, Link.
concolor, G'ordon. ..... 216
PICEA．
PAGE
Douglasiz，Link． ..... 21
Engelmannii，Engelnann ..... 5
exrels！，Link ..... 6 ..... 6
＂ronica，Carriere ..... 11
，．denudata．Carrière ..... 8
＂eremitt，Carriere ..... s
miramidalis，Carricre ..... 10
firma，siebold ..... $20-1$
Fortunei，Murray ..... 27
Fiaseri，Loudon ..... 20.5
＂glauca，W＇m．Pcul．． ..... 206
＂Mudsonia，Loudon ..... 206
＂，Mudsonien，K゙might ..... 2,6
grandis，Souden ..... 216
sramtis，Lobb ..... 218
Ifertertiance，Madden ..... $\because 22$
hirtellit，Loudon ..... 212
holophylla，Giordon ..... ごиі
Hudsonica，Hort． ..... Еиі
Jezoensis，Carrière ..... 11
Carmire ..... 27
Khutrow，Carriere ..... $1!$
fukiunaria．Wenderth ..... 197
lasiocarpa，Hort ..... 212
Latinorum，Jauhin ..... is
Lowiana．（iorion ..... $\because 15$
Lowi，Hort． ..... $21 \%$
magnifica，Murray ..... $21!$
major Tmmes，Pauhin ..... c
Menaicsir，Carricre ..... 12
Mertensiant．Vrenelı Gar－ dens ..... 29
Mi＇ensis，Hort． ..... 211
microvererma，Currière ..... 11
Wormetr，Link ..... 19
Niphthe，Knight ..... 222
rigra，Link ..... 13
，＂fustigiata．Carriere ..... 14
nobilis，Lutudun ..... 207
glanca，Ilurt． ..... 203
Norduramiana，Lorulon ..... 20
Numidica，$f_{i}$ ．Sinth ..... 2201
ali mate，Leileboner ..... 14
（1）ithtulis，limk ..... 15
Prasonsi，Hort ..... 218
meetinata，looulor ..... 2019
fustiriata，liooth
211
211
＂ teioctectet，Ifort． ..... 215
Mitensis，Hort． ..... 211
nana，Kıvight ..... 211
＂ pendula，Godefroy 211
PICEA PAO
pectinata tortuosa，Booth
211
Pichta，Varicgat ..... 221
＂alla，Hort ..... 214
＂Ionnijalia，Hort． ..... 21.4
Pindrow，Loudon ..... 2．2
221
Piinsapo，Louilon ..... 22.1
＂głauca， Io rt． ..... 427
225
225
，olita，Carriére ..... 16plyramidulis，Mort．
religiosa，Loudor． ..... 210 ..... 21：
＂．glaucescens，Gorrl in
Rivit，IIOrt ..... $21: 3$
rubra，Link ..... 17
Sherenkianr，Hischer ..... 14
Silivice，Hort ..... 221
„ alba，Hurt． ..... 214
Sitckensis，Carrière ..... 12
ta．cijolia，Hort． ..... 209
Veitchii，llor ..... 210
$\because 2$
vulgaris，Link ..... 6
Webbiana，Loudou ..... 224
Hitlmantians，Fijelher ..... 15
MNUS，Linntrys ..... 22
Abasica，Carriere ..... 237
Abrhasin，Fischer ..... 235
Alier，Du Fioi ..... 2113
Abies，Pallas ..... $1!$
Alles，Thunberg ..... 16
Alice，Linneus ..... B
＂Amerizuth，Mar－h． ..... 22
Acapulecnsia，Don ..... 291
Aculcensis，Roezl ..... 304
redunce．Hosc． ..... 270
atba，Aiton ..... 3
allicanlis，Engchmańn ..... $30: 2$
Alroquiana，Parlatore ..... 4
altissina，Ledebour ..... －5！）
Banks ..... 23！
mopemuruiles，Mort． ..... 24.5
umabilis．Jonglas ..... 213
Amecrensis，Ioczl ..... 304
Americana，lon lioi ..... $2:$
Gürtner ..... 17
＂pelustris，Du－ hancl ..... 200
gubia，Watyoh． ..... 17
ungulata．Tioezl ..... 312
Antoineana，lioczl ..... 316
PINUS.
Aphernousti, Loudon
PAGE
Apollinis, Antoine ..... 197 ..... 295
Apulcensis, Lindley ..... 290
Arabica, Sieber ..... 238
Araucana, Molina ..... 39
Arouranensis, Knight ..... 2.
Arcerayi, Sicbold.
aristata, Ency+lmutitic ..... 2?11
Astecuensis, Roczl ..... 290
Atlantica, Endlicher ..... (6)
atrovirens, Rocz ..... 314
Auchlundii, Ioddliges ..... 268
Australis, Micharux. ..... 260
" excelsa, Loudon ..... 261
Austriaca, /loss ..... 299
varicgata, Lan'son ..... 230
Ayacaluite, Ehrenber'g ... ..... 292
. Blanco, Hoczl ..... 20.4
" macrocarpa, Hart- weg ..... :311
, colorada, Elıcı- berg ..... 311
Aztecaensis, Koczl ..... :301
Lach/housimua, Roezl ..... 325
brlsamen, Limmous ..... 200
Banksiana, Lambert ..... 230
Balfouriana, Jeffrey ..... 20:3
Beardsleyi, Murray ..... 281
Benthamiana, Ifartwey ..... 261
Besseriana, Roezl ..... 287
bicolor, Maximo ..... 4
Blanco, Knisht ..... 298
Bolanderi, P'urlutore ..... 231
Boothiana, Roczl ..... 320
Boursiert, Carrère ..... 232
brachyphyylla, Parlatore ..... 201
brachyptera, V'islizouta.. ..... 263
bracteata, Don ..... 202
J3royoitlii, Hort ..... 323
Brunonuana, Endlicher. ..... 21
Brutea, T'cnore ..... 2:3
bulluta, lioezl ..... 301
Bungeana, Zutcterini ..... 263
Bunnaparten, lioral. ..... 291
Cairict, Don ..... 238
Culabrice, Hert. ..... 210
Culijornice, Hartwer ..... 288
Lnisel ..... 270
Canadensis Willdenow ..... 23
bifolia, Duhamel" quinquefolia, Du-hamel322
PINUS. pats
Canadensis mijolia, Du- hamel ..... 283
Canarieusis, Smith ..... 264
Caramanensis, Vilmorin. ..... 241
Carputice, Hort ..... 25
Carièri, Roczl ..... 312
Cotucasica, Fischer ..... 259
C'avendistiana, Paxton ..... 272
C'benensis, Hort ..... 239
Cedrus, Linneus. ..... (i)
Cedius, Roczl ..... :308
Cembra, Thunberg ..... 317
Cembra, Linncers ..... 295
, excelsu, Maximo. ..... 296
„. fruticose, Gries- beck ..... 318
Itelvetica, I ooddinges
Itelvetica, I ooddinges ..... 295 ..... 295
" Tumistrata, Mad-den297
Mrentelschuricce,Re- gcl.... ............. 290monophylla, C'ar-
riçe ..... 396
nana, Hort ..... 297
mumila, Endlicher ..... 297
nygmaa, Loudon ..... 297
Riossice, Ifort. ..... 296
Sibirica, Lorclon. ..... 206
stricta, Hort. ..... 295
vulgaris, Endlicher ..... 205
varicgata, 11 ort ..... 297
cembroides, Zacearini ..... 274
cmbroides, Gorton ..... 265
Cephalonira, Tadlicher ..... $20: 3$
Chalizatensis, IRocrl ..... $: 25$
Chihuhnana, Wisliz!nus. ..... :266
Chineqsis, Knirgit ..... $2: 9$
Chilnhosa, Elphinstone ..... ge8
Chizlln, Loddiges ..... 99
Cilicica, Kutschy. ..... 214
cinerca, Roling ..... 6
courctuta, Ruczl ..... 320
Colchict, Booth ..... 2.38
Comonfortice. Roce! ..... :3)
concolor, Parlatore ..... 216
conglomerctu, Grieffic ..... 2:3:
contoria, Douglas ..... 232
cornea, Hoczl ..... 297
corntgata, Roezl ..... 304
Corsicana, Hort ..... 239
Coulteri, non ..... 266
Creigiemr, Balfour. ..... 281INDEX.447
PINUS.
Cubensis, Hort. ..... 267
rupressoides, Molina ..... 183
Dahurica, Fischer ..... 169
Dammara, Lambert ..... 111
Dreainnerna, lioczl ..... 309
Decandollecma, Rueal ..... 308
decidua, Wallich ..... 21
rifftive Torrey ..... -2ヶ?
densitura. Sicbold ..... $\therefore 3: 3$
Dcodera, Poxbiurgh ..... (bl
at pendrus, Roezl ..... 304
fronainm, Lindley ..... 295
Dicksomii, Ilort ..... 299
dietritis. Hort ..... 251
dioica, Arrabida ..... 37
diverricrita, Mort ..... $\boxed{6} 30$
Doll riuna, Roeal ..... : 3.1
tomestira, Matthioli ..... $\therefore 72$
Don Pedri, linezl ..... 311
Douglacii, sal ine ..... 21
dremosa, Lambert ..... 21

1) athanthrais. Riveri. ..... 291
chinutu, Miller ..... 213
," I lort ..... $\because 45$
Eifforiuma. Hartweg ..... - 16
pdutis. Wistizenus ..... -1.
F:hrenbergii, Endlicher ..... :3
tegams, lloezl ..... 320
Endlicheriana, Roezl ..... 313
longijolier, Roezl ..... 309
Engolmanni, ("urrière ..... 269
Erseroomica, Calvert ..... 259
Iiscarena, Hort. Sine ..... 251
lisca itumiante. liveza ..... 270
recelsa, I mmarek ..... 6
execlss, Wallich ..... 209
axcorticata, Ciordun. ..... $26 ; 3$
erserte, Hoczl ..... 319
Fen=lii, Kotochy ..... $\because 4$
fortilis, liveal ..... 265
filifola, Limilley ..... 301
líntomsomic u, IV alheh ..... 242
Fischeri, fonth ..... 215
flexilis, Torary. ..... 3 !2
Fortunei, l'arlature ..... 27
L'vaseri, Luddiges ..... 243
" Pursh ..... 205
Fremontiana, Fimellicl , ..... 235
jrondosa, Roezl ..... 30) 1
(íalocote, Ionezl. ..... 287
lieitmeri, lioezl ..... 304
Cienteensis, C'ook ..... 236
PINUS.
Georgica, Hort ..... 260
Gerardiana, IF allirlu ..... 263
!later, Maneh ..... 3
Liordoniana, Hartwes ..... 305
gracilis, Roes ..... 303
grandis, Douglas ..... 216
Tonezl ..... 320
Greggi, Engrimans ..... 2.0
Grenvillere, Goidon ..... 303
Hirageara, Roezl ..... 320
Hatepensis, Aiton ..... 236
-, Meritima, Loudun ..... 237
minar, Loudon. ..... 230
lityusa, Nteren ..... 23.
rotucduta. C'arriere ..... 232
Šal-manni, Dnual ..... 250
Syriacr, Rauch ..... 237
hemeta, lineal ..... $-291$
II (rmilentï, Tenore ..... 2511
Hartwemii. Jindleng ..... अ!
Meldreichii, (lirist ..... 211
IIfndensoni, Roezl ..... 311
leteromorilta, Finezl ..... 313
heterophaylla, Endlicher ..... $\because$
//ierosolymitana, Du hamel ..... $931 i$
heirtella, Humboldt ..... $21:$
IVispanic e, Cook ..... 250
Rolupulalla. Parlatore ..... 206
hori-ontilis, Rueal ..... 321
Hoserianuc. Pivezl ..... 278
Ifuclamion. Lamarek ..... 230
Hugcli, Foezl ..... 257
//uis fuilucaenvis, livezi ..... 304
Indies. Mancti ..... 299
implexs. Herezl ..... 31 :
inmss, solarder ..... 23
insignia, Homglat. ..... 2.0
.. newrocurp'. Hart- weg. ..... $2 \times 2$
insularis, fintlicher ..... 271
intrmeetia. l'ischer ..... $24: 3$
interposite. Rueal ..... 247
Titucetwatli, lioezl ..... 301
farumicer, London ..... 219
Autoine ..... 23:3
Jeffreyii, laljour ..... $\because 2$
Itifiryana, Iran Houte ..... 272
Jtzoensis, Antoine ..... 11
Jostii, Roezl ..... 31
F'umtechnticu, Endlicher ..... $1 / 2$
PINUS.
Kasiya, Royle
PAGI: ..... 272Kcempferi, Lambert
360
Kegelii, Roczl ..... 287
Tul, Mos,
Tul, Mos,
R'cteleeri, Roczl ..... 301
Khasyana, Hooker ..... 972
Khutrou, Royle ..... 19
Koraiensis, Sipbolil ..... 306
Kreleufi, liocal ..... 304
Lambertiana, Donglus ..... 307
", brerifolia, Hookcr ..... 302
lanceolata, Lambert ..... 77
laricina, Du Roi ..... 177
Laricio, Poiret ..... 23.9
Austriaca, Loudon ..... 229
" Calabrica, Delamel ..... 240
Caramanica, Loudon ..... 240
contorta, Hort. ..... 240
Montana, Hort. ..... 240
Monspeliensis, Vil- morin ..... 255
, nana, Hort. ..... 240
,, nigrescens, Parlatore ..... 229
Pallasiana, Loudon. ..... 247
pendula, Carrière ..... 241
pygmiea, liauch ..... 240
lyrenater, Loudon. ..... 255
subviridis, Dutumel. ..... 2410
tenuifolia, Parlatorc. ..... 255
Lavix: Pallas ..... 173
" Thmuberg ..... 173
" Linneus ..... 169
", nitrol, Nocnch ..... 177
", rubra, Marsh ..... 175
lasiocarpa, Hooker ..... 213
Latteri, Madden ..... 24.9
Lawsoni, Roezl. ..... 273
laxe, Ehrhart ..... 3
Ledebouri, Endlicher ..... 173
lciophylla, schicde ..... 308
Semoniana, Bentham ..... 251
leptolemis, Endlicher ..... 17.3
Leveloi, Roczl ..... 308
Leroyi, Roczl ..... 312
Lindleyana, Cordon ..... 3011
Llave:ma, Schiede ..... 274
" rar., with thin shelled secd, Int'tweg ..... 235
Loddigesii, Loudon ..... 283
Loiselcuriane, Carrière ..... 232
longifolia, lioxUurak ..... 275
lophosperma, Lindlley ..... : 10
Loudoniana, Gerdon ..... 311
PINUS. Phos
Loun, Roezl ..... 313
lutea, Loddiges. ..... 243
Makoy ..... 261
Me"Intoshiunc, Lawson ..... 233
macrocarpa, Lindley ..... 266
macrophylla, Lindley ..... 312
maeropryylla, Wislizenus.. ..... 268
Aladeriensis, Tcnore ..... 232
Magellensis, Schow ..... 240
maynifica, Roczl ..... 298
Marituna, Du lioi ..... 13
matritima, Aiton ..... 23!)
Lambert
237
237
Lamarek
Lamarek ..... 249 ..... 249
" Lamarck minor, Duhanel ..... 251
prima, Matthioli ..... 237
trocuta, Knight. ..... 251
Marylandica, Booth ..... 13
Massonicuna, Pitlatore ..... 286
Lambert ..... 249
Massoniana, Siebold ..... 241
Mensiesir, Donglas ..... 12
Mcrkiana. Vriese ..... $-42$
Mertensiana, Bougard ..... 29
Michoacciensis, Roczl. ..... 301
microcarpa, Lambert ..... 175
Roczl
287
287
mitis, Michren. ..... 243
imonopllylla, Torrey ..... 235
Monspeliensis, Salzmann ..... 250
monstrosce, Roczl ..... 320
Montena, Baumann ..... 2.15
Wahlenberg ..... 215
" Lamarck ..... 205
Monte-Alleyrr, Roczl ..... 308
Montercyensis, Rauch ..... 2.0
Montczumx, Sambert ..... 31:3
"Lindleyi, Loudon ..... :39
monticola, Douglas ..... 314
Murinde, Hort. ..... 19
Mugho, Durehin ..... 244
" humitis, Neal ..... 203
", 11ana, Loudon ..... 24.
," rostrata, Antoine ..... 24.5
" rotundata, Jink. ..... $24 . \%$
", uliginosa, Wimmer ..... Q45
M"u'flus, Lourlon ..... 241
Múllcrianc, Roezl ..... 281
muricata, Don ..... 2.16
var:, Bolander ..... 2:31
Murrayana, Balfour ..... $2-4$
neglecta. Low. ..... 219
INDEX．449
PNUS
Tro＂r．（iovan ..... 265
 ..... 12
Royle ..... 24.9
 ..... 325
$\boldsymbol{N}^{\prime}$ e゙凶elirntinne，lioezl ..... 324
nigral，diton ..... 13
＂）Link ..... 2．29
nijgrescens，Hort ..... 229
niyfricans， 110 s ..... 2．9）
mitidr，lioezl ..... $\because(01$
nicers．loneth ..... 32.
nolilis，l）ouglas ..... 217
Sonthetensis，Manetti ..... 241
Norelmremenerne，Stevell ..... 218
lirmenamleriandiun＂． Poczl ..... 320
Hivere Mollumelien，Losldige
S＇weraZeralundica，Lodrliges ..... 213
211 no memulriria，Japanese ..... ：3
obliqua，Santer ..... 213
nhotati，Antoine ..... 11
＂，Sihrenkiance，l＇urlatere .....
1 .....
1
－l）（wimi（tme，liseal ..... $2!5$ ..... $2!5$
Ocampi．liveal
Ocampi．liveal ..... のは ..... のは
Occidentalis，sucent． ..... 315
，Ilurt ..... 313
IIumbolelt ..... 31：
Ocite，Rousl ..... ：，111
oocarpa，Sililide ..... 315
oocarnuides，l＇enthram ..... 316
Orpisianil，lioezl ..... $: \because 21$
Orientelis，Friwald－ky ..... 216
＂bull1rens ..... 15
＂Immisiolia，Ledel uur ..... 12
Orizabax，ínrilun ..... 316
oste asy rimu，Wislizasi！： ..... にな．
Prellerie．Leclebomr ..... 2．：3
Pallasiana， ／ataloit ..... 217
Prelmichsis，f＇rencls（inr－ dens ..... E（10）
Pulmiori，Manetti ..... －1i
palustrox．Miller ..... ：（i）
－tilPajürl ui，Foezal
：1：1
P＇orolinernm．IV elb ..... －？$>$
Parryanar，（iurdese ..... 271
Perimene，l＇arl，tore ..... 29：？
farvitiora，s＇̈．lıolel． ..... 317
1atila，Sólicale ..... $\because 7$
，erecter，Hort． ..... $27!$
： ..... 9
：＂ ..... 2－7
PはL゙か。
page
Purliliousaliusu，Proez． ..... 312
Partoni，Roczl ..... 32？1
pectmata，Lamarok ..... 209
Peloponnesiucu，Haage ..... 197
penelula，Aiton ..... 17
：Gritlith ..... 299
prmirillus；Lapejronse． ..... 255
Persica，stranyumas． ..... 249
1＇euce，Griseloik． ..... 318
Picen，Dn Roi ..... 6
，Willdenow ..... 20.1
．－Tournefort ..... 20 A
conicu，Eindheher ..... 11
Pichle，Fischer ..... 221
Ins！nimidir， 11 ort ..... ㄴ1．
Pinaster，Atiom ..... $24!$
＂，Ahprem（तारा，Loudon．． ..... 200
altissinne，Lamarek．．． ..... 2011
，I：scarena，Luudon ..... 250
，，IIamiltonii，Z＇enore． ..... 251
＂Mispenier，Roxas ..... 235
＂Leinoniana，Loulon． ..... 251
＂metor，Duhanel ..... 200
，minor，Lomlon ..... 251
varierata．Jlort ..... 251
Pinceana，límion ..... 251
Primlioin，Royle ..... 22：3
Pinea，Litmuls ..... $25:$
＂Americant，Hurt． ..... 25こ
＂Artice，IJort ..... こうこ
＂（＇hinensis，Knight ..... 252
＂（＇retica，Loulon ..... 253
＂fragilia．Duhurnel ..... 23：
Tarentin！，Manett ..... 25.3
I＇intura，Endlicher ..... 224
variegnla，Lawson ..... 2？：
Jitheymee，Strangways ..... 237
pulifu，Antnine ..... 16
Prim lituter，Hart ..... 239
ponderusa，Driurilus． ..... 븐
l＇uporelt julii，lineal ..... 311
piravinu，linezl ..... 27
pretuhtrans，Hoczl ..... ． 11 ！
Penmin－IIulvieresis，Den－ hardt ..... 2．5．5
I＇snu（i）－Zarrir；Steudel ..... 173
Pseudo Strobus，Limell in ..... ：320
Posudo－Tiuda，Tenom ..... 250
Pumilio，Hentir ..... 25：
＂rutumduf（e．Inct． ..... $\because 45$
pungens，Michutror ..... 2.51
P！／mmect，Fischer ..... 297
PINUS.
myamidatis, leuss ..... 245
PINUS.
Smithiana, Lambert ..... 19
Hort. ..... 239
Pyrenaica, Lapeyrousc ..... 255
quadrifolia, Parry ..... 2.93
radiata, Don ..... 282
Regeliana, hoczl ..... 321
Religiosa, Humboldt ..... 212
resinosa, roluncler. ..... 256
Roczl. ..... 304
retracta, Roezl ..... 325
Richardianer, Roezl ..... 309
rigida, Miller. ..... $25: 3$
serotina, Loudon.
serotina, Loudon. ..... 245 ..... 245
Ii̛Msi, Roezl ..... 321
robusta, Roczl ..... 309
Rohomi, linezl ..... :21
liomiana. Hort ..... $2 \cdot 10$
Rioylei, Lindley ..... 24:3
rubescens, Toezl ..... 321
rubra, Lambert ..... 17
mulua, Michanx ..... 256
rubru, Siebold ..... 233-241
violacea, Endlicher ..... 18
rubraflora, Loudon ..... 245
rudis, Endlicher ..... 309
Roczl ..... :31?
Irameliana, Rocal ..... 320
rup estris, Michaux ..... 22:0
Tu-sclliana, Lindl(!) ..... 321
Sabina Coulteri, Loudon ..... 2c6
Sabiniana, Douylas ..... 284
" macrocring a, Hort ..... 206
" mají: " netti ..... EC6
Salamanni, Dt:1...1 ..... 255
sanguinea, Lapeyronse ..... 245
San-liatactiana, Roezl ..... 320
satira, Bauhin ..... 252
Amann ..... 295
Schernliana, Antoine ..... 18
Scotica, Willdenow ..... 258
scoparia Roczl ..... 304
setcholepis, Panatore ..... 226
Servalyensis, Madden ..... 275
serotina, Michura ..... 285
Shasta, Carrière ..... 302
Sitirica, Steudel ..... 221
Sitirica allua, Fischer ..... 214
Sinclairi, Hooker ..... 261
Sinensis, Lambert ..... 256
Sitchensis, Bongard ..... 12
Shimerii, Forlics ..... 301
Skimerii, Hurt. ..... 316
Soulangeana, Roczl ..... 320
sp. like Ayacaluitc, Lou- don. ..... 311
spectabilis, Lambert ..... 226
spinosa, lioezl ..... 320
St. Melenica, Loudon ..... 243
Standishi, lioczl ..... 304
striata, Hamilton ..... 226
stricte, Hort ..... 240
strotilifurmis, Wislizenus. ..... 292
Strobus, Limazs ..... 322
Hamilton ..... 293
Thunberg ..... 396
alba, Loudon ..... 32.
brevifolia, liooth ..... 323
compacta, 110 rt. ..... 427
compressa,Loddiges ..... :223
cacelsa, Loudon ..... 203
Monticola, Nuttall ..... 314
$N^{\prime}$ cpalensis, Hort ..... 9
nana, Kinight ..... 323
nivea, limight ..... $32 \cdot 1$
pumila, Hort. ..... 32:3
iabuliformis, Hort. ..... 323
umbracnlifcra, Hort ..... 323
suipatatet, Hoezl ..... 278
Sudeficus, Ungrisele ..... 253
surfiruticosa. Roczl ..... 30.
Sumatrana, Dirbel ..... 111
Junghu ..... 242
Sylutstris, Thunberg ..... 241
Sylvestris, Limmeus ..... 257
Altaica, Ledelonr ..... 259
altera, Dodon ..... 295
argentea, silcuen ..... 260
brerifolia, Link ..... 245
Combra, Mat- thioli ..... 205
divaricatu, Aiton ..... 230
Liscarcont, Pinet-
Woburn ..... 257
Gonerensis, Bau-hin257
IIaruenensis,Loudon257
hamata, Steven.. ..... 261
horizontalis, Don ..... 258
humilis, Link ..... 245
latifolia, Gordon. ..... 259
monoplyylla. Mod-geris259
INDEX．451
PINUS．
Sylveestris montana，Aiton．tace
Host．．． 258 ＂ ..... 2.4
＂．Mugho，Bat ..... 299
$\therefore \quad$ Persica，IInt． ..... －อบ
＂my， 1 maa，Hort ..... 253
＂lirgensis，Fischer ..... 2.57 ..... 2.57
rotundenta，Link． ..... $2-15$
＂，rubre，Grigor ..... 259
＂mucinuta，Dull ..... 25
＂C＇rulensix，V＇ischer ..... 25．）
19 scariosu：Lnddiǧts ..... 257
sme uruser，Busc．．． ..... 25
＂，variesita，Iluit． ..... 2！！
＂ vinlonixix，（lu ins． ..... －い
Syltica，＇Thure ..... 21.$)$
tulalaformis．Iurtunc ..... 241
Ticda，l．vetulus ..... こ
＂ul＂ije trunders，ditun ..... 24．3
＂rijule，Niton ..... $2-3$
＂quaralidis，Michatuษ． ..... $2!3$
Tutaricu，Dtiller． ..... 2.03
Tramiora，Llort． ..... 27
traxifolin，Lamuert ..... 24
Trhmgatskui，Fischer ..... 214
Penangenensis，linezl ..... 3219
tenuifolia，Jentham ..... 324
Tencute，Sihiede ..... 247
teliugjurt，Mcenclı ..... 3
Thelemanmi．Roezl ..... $: 30$
Thibaudiame，livezl ..... $\because!$
Thunberonii，limlate ..... 211
Timurcuis．loudon ..... 271
linctoren，Wiallich ..... 236
Thammeuensis，livezl ..... 30）！
Iomarorum mis，Roez］ ..... 3ㄴ11
Torregntme，l＇arry ..... ：311
Troube livimac，Rueal ..... 321
Tare！ue．Lutoinc ..... 32
tuberculata，llure ..... 248
lumider，linezl ..... 243
trrdimnte，lase． ..... 2． 2
I＇smpnoliantr．lioczal ..... $\because$
＇ncriutu，liaymond ..... 2） 1
Widdrinston ..... 24.5
calliili．Roczl ..... 3！）1
Gus－linumi，lionzl ..... 301
Ten－1loutlei，luczl ..... $3: 29$
atriulilis，I＇ursls ..... $21:$
Lambert ..... 2：3
Prilchi，Roczl ..... －J！
veuester，Douglits ..... 202
PINES．
＂cha゙ Ierisu，Roezl ..... $30 ;$
Verecherficlti，Roezl ..... 320
ierticillata，Siebold． ..... $37 i$
Vilmorini，lioezl ..... 287
Virginicena，Miller ..... 238
：temeifolia，Ilu－ kenet ..... 296
Webbiomace．Wallich ..... $2 \div 6$
Wilsomi，Ruezz． ..... 313
11 incesteriana，Gordun ..... 325
IVinersterian i，Hurt ..... 325
Zacrel＇aum，lioczl． ..... 290
Zamorae，is，livezl ..... 301
Zitucuari＇，luszl ..... 293
Tharoladus riol rala，Lijach ..... ：isx
s＇rietu，S゙pach ..... 50
1U1）OC．IRI＇LS．IILEritior． ..... 326
aflinis，Scemann． ..... 326
a methifulin，Blume ..... $15 \%$
Alpina，Moroker ..... $3 j 1$
，Levirnciana，Par－ latore ..... 353
amarn，Blame＇ ..... 327
Andina，P＇olprig ..... 351
angustifolia，Perluf（o）e ..... $3: 7$
Sifferctira，Van Huntte． ..... 332
sinfillamom，lR．Bruwn ..... i331
aristulata，Parlatrore ..... 324
aspelenifulia，Iabillardier． ..... 194
Jiectarii，Parlatora ..... 185
liedicille，Hubbrenk： ..... 350
lifions．Eindlirher ..... 10.4
lilumei，Findlicher ..... 186
bracteata，$l i l$ ms ..... 323
．，lincripes，Blume ..... 329
Chilmizu，l．hiler ..... ？ 4.1
Chilima，Jiclutul ..... $32!1$
C＇hinensis，H＇allich ..... 3311
argenten．fiorclon ..... 3.31
aturea，finterm ..... $3: 31$
Hanca，lurea，lich ..... 3：31
Cuberna，Van Holitte． ..... 411
corrugata，Ciorion ..... 332
Cumingii，Parlulore ..... 357
cupressina，R．lirown ..... ：3．） 5
curvifolia，Cervire ..... 332
musinlata，Endlicher ..... 187
dacrydioides，lickeure ..... 0.57
disenlor，Blume ..... 3：3：3
Drouyniana，Murler． ..... 23.3
dripueca，Hort． ..... 67
PODOCARPUS.
dulcamare, Scemann ..... 327Panip
clata, I. Lirown ..... 334
elongata, Heritier ..... 3.3
elomata, Mcyer
Endlicheriana, Camière. ..... 335
ensifolia, R. Brown ..... 335
curhyncha, Miquel ..... 336
excelsa, Ioddiges ..... 347
falcata, R. Brown ..... 336
falciformis, Parlatore ..... 336
fcrruginea, $D$ on ..... 352
glomerata, Don ..... 333
grandifolia, Endlicher ..... 187
Horsfieldii, Wallich ..... 356
Mumboldtii, Hort ..... 332
Humboldtii. Hort ..... 355
imbricata, Blume ..... 356
Jamaicensis, Hort ..... 345
Japonica, S'iebold ..... 3:37
" clegantissima, Ilort. ..... $3: 37$
Junghuhuiana, Miquel ..... 3-42
Koraiana, Siebold ..... 338
læta, Moibrenk ..... 338
Lamberti, Nilotzscha ..... 333
lanceolata, Hort ..... 337
latifolia, Wallich ..... 189
lutifolite, Blume ..... 186
Tatifoliu, R. Brown ..... 3.15
Lawrencii, ILooker ..... 353
leptostachya, Blume ..... 333
linearis, Van IIoutte ..... 334
longifolia, Hort ..... 310
macrophylla, Wallich ..... 34:3
macrophylla, Don ..... :340
macrozhylla, Maki End- lich ..... 330
macrostachya, Parlatore ..... 341
MKakoyi, Lawson ..... 330
Maki, Siebold ..... 330
Matoya, Pinet Woburn ..... 335
Makoyi, Itort. ..... 330
Mannii, Hooker ..... 341
Mcyeriana, lindlicher ..... $3+1$
minor; Parlatorc ..... 1.90
Miquelia, Hort. ..... 830
montana, Lortdiges ..... 3\%)
mucronata, Hort ..... 3:3-1
Nageia, R. Brown ..... 188
ncglecta, Blume ..... 342
neriifolia, $R$. Brourn ..... 3.13
nivalis, Ilooker ..... $3 \overline{3}$
nobilis, Hort ..... 335
PODOCARPUS.
Novar Caledmite, Vier/ lard ..... $34: 3$
mubicola, Makoy ..... 344
nubigæna, Limilley ..... 344
nuciferc, Persoon ..... 411
olcifolia, Done ..... 34
parvifolia, Partatore ..... 345
pimnata, Hort. ..... 189
polystachya, R. Eroun ..... $3+5$
pruinosi, Zeyher ..... 334
pangeins, Don ..... $3+7$
Vin Houtte ..... 350
Purdicana, Howke ..... 345
.". puareifuliu, (trisebock ..... 328
rigicla, Klotzsch ..... 337
rimalaris, Pancher ..... $34: 3$
Rumphii, İlune ..... :31;
salicifolia, Klotzsch ..... :347
saligm, Don. ..... 329
Scllowii, Klotzsch ..... 347
spicata, lirourue. ..... 354
spicatr, Pappig ..... 351
spinulosa, li. liroun ..... 347
spinulosa, Makoy. ..... 3 3ั
Sprucci, Parlutore ..... 345
taxifolia, II umboldt ..... 355
taxifolia densifolia, Kunth ..... :35:
taxodioides, Carrierc ..... 101
tenuifolia, $P^{3}$ arlatore ..... $35!$
Teysmanni, Miquel. ..... $3+8$
thevetiæfolia, Blume ..... $34!9$
thuioides, R. Brown ..... 357
Thunbergii, Ilvolei' ..... 349
Totara, Don ..... 350
usta, Bronngriant ..... 353
verticillutu, Hort. ..... 340
Vieillardii, Parlatore ..... 359
Triesiana, Hort. ..... 330
Yacca, Don ..... 331
zamicefolia, Richard ..... 105
Hort. Bcig ..... 189
Prumanpuitys
elegans, Philippi ..... 351
PSEUJO-LARIN, Gordor ..... 361
Kicmpferi, Cordon ..... 360
Quadrifaria
imilsicata, Manctti ..... 39
RETINOSPOR , Sicbold ..... 362
clecnssata, Hort. ..... 364
clubia, Makoy ..... 36.1
Elwangeriana, Barry ..... $36 ?$
ericoides, Zuccurini ..... 3 3í3
RETLNOSPORA.
filicoide. Veitch ..... 363
filifera, stendish ..... $36 \cdot 4$
graciliz, Hort. ..... $+27$
Fusinoki, Zuccarini ..... 307
juniperoides, Carrier: ..... 361
leptoclada, Zucearini ..... $3{ }^{\circ}$
lyeopodioider, Staulidh ..... 36
monstruser, Hort ..... $36 f i$
obtusn, Sielo?! ..... 367
9 alba spica, blrome ..... $+27$
argentea, Fortur ..... :35
" aurea, Fortune ..... 365
compacta, LIort ..... 36
jilicuiters, IIont ..... 365
rracilis auren, litith ..... 424
, Keteleeri, Stundislo ..... 315
mana, Hort ..... : 193
nana auren, ${ }^{r}$ cit h ..... 1-3
lygmtes. Ciorlion ..... 覑
1मisifern, Süebel. ..... 305
„ aurea, 11 ort ..... 370
" erecta, If mH ..... +20
" Emacilis, Hont ..... 420
, 3 lumos r, Hort. ..... 3011
nana aurea, /IÓt. ..... 425
plumosa, $I / \mathrm{mt}$. ..... 3."1
, alba variecrati, Mort. ..... $+20$
, argentca, Hort. ..... 371
", aurea, llort. ..... 371
" antea variemata, // omt. ..... 42

- aturer pumila, /lort. ..... $42: 1$
, flarescens, Cripys ..... 42.1
suarrosa, Šicbuld ..... 3.1
" Iepructutle, Siebold ..... $3(5.5$
„. variegata, Ňichnll ..... 3-2
sivicter, Hort. ..... 429
tetragona, Buron ..... 429
LLISBURIL, smith ..... 373
adiantifolia, N"mith ..... 374
„ la ini ite, Currierc. ..... 375
" macrophyll 3 , Hort. ..... $3 i 5$
" pendula, $F_{\text {Kr }}$ Gerrt. ..... 375
, Pariegata. Comrièr. ..... 3TJ
Ihtlardiervi, lichard ..... 191
Ginlyo, Salisbury ..... 371
macrophylla, Regniter ..... 37
S.1KE-COTH.EA, Lindley. ..... 3.2
conspicua, Lindl'y ..... 32
grarilis, Hort. ..... 344
Sultubrvith Capenesis. Spretigrt. ..... 118
distichut, Mirbel ..... $3 \leq 2$
S'chubertiu, disticha, , mbricuth, Spach ..... 383
Japemica, Spach ..... 126
semperirens, spach ..... 379
nutefore. Denhardt ..... 126
SLIADOPITYS verticillat:, Sicboht ..... 3.6
verticillata varicgata, $H$ ur- $t$ ime ..... 3in
SEQUOIA, Éndlicher ..... 3!!
!ity meter, Endlicher. ..... 41.
sempervirens, Endlicher. ..... $3: 3$
" glauca, /lort. ..... 381
"Lawsmana, Mort ..... 430
Wellinytoric, Seemana ..... 41.,
Triturlii, sp., Douglas ..... 415
TAJODILIS, lichual. ..... 351
adscendens, Brongniart ..... 343
Cupensis, Hort. ..... 414
distichum, Richarel ..... : -3
" denudatum, Hort. ..... $35:$
" cacelsum, Booth ..... 384
,. fastigiatum, Ǩuisht ..... 3-3
,. Mexicanum, Giordur ..... 
- miterophyllum,Spach 3s.
- nanun, Carrière ..... 351
", nigrum, IIort. ..... 382
," nutans, Loudon ..... 30.5
-. patins, Ennlicher ..... 35
- Den Tulum, Loudon ..... 35.
" fintuttem, llurt. ..... 334
" sempervirens, liaz ..... $38-1$
". Sin mxis, London ..... 3 3i
iristiviuter. Hort. ..... 3-3
Htureft ldii, Kinight ..... 3.26
Ituyeli, Lawson ..... 384
Joponicum, Denhardt ..... 126
Japonicum, Prongniart.. ..... 74
" héteropluyllum,
13ronghiart. ..... 126
inaip=ioiles, Hurt. ..... 418
Mexironum, Carritrc ..... 35
mieruplyyllum, bromprot ..... 354
Jonterema, Dunal ..... 354
mucronatma, 'Tenore ..... 351
nuriferum, Brongniant ..... 121;
मuthrensis, Lambert ..... 379
pinnaturn, Hort. ..... $3 \mathrm{~S}-1$
semperticis, Lambert ..... 3:!
;, albos spien, Hust. ..... 351
©, stutemit, Hort ..... 351
Sinensis, , Vuise!le ..... 355
'IAXODIUM.
Sinensis, pendutum, Forbes ..... 55
risat
virens, Knight

$\qquad$ ..... 384
Washinglonianum, TVin-slow415
TAXUS, Linnceus ..... 386
adpressa, Inniglit ..... 387
baccata, Thunberg ..... 387 ..... 67
baceata, Limecus
baceata, Limecus ..... 388
Nidpathensis, W.
Pcurt ..... 392
nigura, W. Paul
nigura, W. Paul ..... 391 ..... 391
recurvati, Curbert.
recurvati, Curbert. ..... 392 ..... 392
19
19
Amcricana, Douglas ..... 392
argentea, Loudon... ..... 388
Canadensis, Loudon ..... 393
Cheshuntensis, ${ }^{\circ}$ Paul ..... 389
Dovastoni, Loudon. ..... 389
" variegata, 1102t... 389
Elrastonensis, $B+t r^{-}$ron430
opaerioides, W.Paul ..... 389
urecta, London ..... 389
, Crowderi, Il ort. ..... 390
cricoides, Mort ..... 390
fastigiata, Loudon.. ..... 390
aurea variegata, Ficicher 391variegata,

C'errière 390
foliis varicgatis, Hort. ..... 385
Foxii, Hont. ..... 391
fruetu-luteo, Louddon ..... 391
glauca, Carriere ..... 391
llibernira, Hort ..... 390
" exrieguta, Hort... ..... 391
horizontatis, Hort. . ..... 38.9
Indica, Madden ..... 396
Jacksonii, IV. Paul ..... 391
Sackison's If eepungI'zu391
Mroxiconce, IJantweg ..... 395
microphyller. Hort. . ..... $3: 0$
minor, Michaux ..... 393
monstrosa, Hort ..... 392
nenue, Hort.
nenue, Hort. ..... 391 ..... 391
nana, IV. Paul ..... 392
!

## 'IAXUS.

betcatersparsifolia, Loudon 392
"sub-glcuecscens, $\quad 391$
variegata, Loudon... 392
varieguta, Barron 430
autect, C'ir-
rierc...... 392
alba, Carrière...... 388
rulgaris, Endlicher 388
limusieri, Carrièro ......... 392
brevifolia, Nंuttell .......... 392
brevifolia, Hort. ............ 387
Canadensis, Willdenore ... 393
" major, Ḱnight ... 393
" variegata, Ifort. . 430
" Washingtonii, IIort. ............. 394
Capensis, Lamarek ......... 334
Chinensis, Toxburglı ...... 330
coriacea, Hort................ 67
enspidata, Sicbolil ......... :39t
Dovastont, Hort. ............ 389
elegantissima, Hort. ...... 358
cloneyata, Solander ......... 334
empetrifolia, Hort. ......... 390
erecta, Hort................... 389
ericoicles, Hort................ :390
jalcata, Jhmberg ......... 336
fustigicuta, Lindley ......... 390
" arpenter, Knight 390
Fortunei, Hort. ............ 338
Foxii, IIort. ................... 391
globosa, Schlectendal ...... 395
Harringtoni, Loudon...... 69
Ilibermica. Hooker ......... 390
Inukaja, Knight ............. 69
Japonica, Honker ......... 67
Taponica, Lodiliges ...... 338
Sambertiana, Willich ... 222
latifolia, Thmbers......... 349
Limallemena, Murray . ... 392
lonsti:oiir, Hurt. ........... $3-10$
mencio $0_{2}$ l.. lin, Timmberg... 340
Mako!ge, Hurt................ 330
marginata, Hort............ 388
microphylla, Hort. ......... 390
Mitchelli, Hort. ............ 3.92
monstrosa, Hort. ............. 392
Montance, Nuttall ......... 412
Montance, Willdenow ...... 355
" var., Willdenow. 350
TAXLS．
nucijera，Poyle ..... s．
muifera，Thunberg ..... 411
Occudentalis，Nuttall ..... 392
Putagonira，Hort． ..... 372
pendula，Hort． ..... $3 ヶ 9$
procumbens，Loddiges ..... 393
pyramidalis，Hort ..... 390
pygrounclalie，Knight ..... 34）
recurvata．Lawson ..... 392
serrulifolit．Noisette ..... 191
Sinensis，Knight ..... 09
＂tavelirer，Knight ..... 357
spicata，Dombey ..... 3.1
spinulosa，Smith ..... 347
stricte，Ilort． ..... 389
tardiri，Lawson ..... 347
tenuifolir，Wickstrem ..... 331
umbiaculiferce，Hort． ..... 344
verticillata，Thmoberg． ..... 3.6
riryate，Wallich ..... 320
Wallichiana，Zucedrini ..... 396
Wheshingluni，llort ..... 3！！
Thatumez aspl＋nifoliu，Spren－ हcl ..... 191
どpががina，Sprentel ..... 104
Thuiacurpus juniperins，
Trautv ..... 137
THULOPDIA，sichole ..... 393
Jorcalis，Fischer ..... 9.4
dolabrata，ä̌ bold ..... 395
\＃）latecirens，Hort ..... 399
＂nani．S＂ieboti！ ..... 309
＂，variecata．Furtelue ..... $40 n$
Inturi－us，Liadley ..... 399
syntedishi（iordun ..... $4 n 8$
Tche grthkoyce．Carrière ..... 9
 ..... 400
amen，Manels ..... 50
Antime，Iupplig ..... 14）
Anturcica，llort ..... 411
aritylla，Burmann ..... 417
arymitea．Ilort． ..... 51
articutatr，Wahlenber． ..... 48
aureen，Waterer ..... 51
A ustralis，Hort． ..... 103
Austialis．Poiret ..... 117
Goncusica．Hort ..... 114
Chitemsis．Dun ..... 150
compacta awrea，Hurt． ..... 51
cminata，Dombey ..... 180
afmesondes，Limmeus ..... 417
Cínigianu，Jeffry ..... 181

## THU．JA．

Crairiana，alaucu，LawsonPMD．
clulabatu，Thunberg ..... 393 ..... 393
Domiana，Hooker ..... 182
Dousjlasii，Nuttall ..... 402
dumosa，Gordon ..... 401
Elu－angeriana，Hort． ..... 362
evievid e，Hort． ..... $30-1$
elegratiesima，Hort． ..... 33
excelsn，Brongniart ..... 94
fincati＂．Hort． ..... 54
fitifurmix，Loddiges ..... 50
dagelliformie，Hurt ..... 106
fieneloils，Hort ..... 52
fieniculatir，Hort ..... 52
gigantea，N゙utull ..... 402
jiguenter，Hort． ..... 181
＂autroviri ns，／／urt ..... 430
，erecta，li．s＇mith ..... 443
＂pumila，Ifort． ..... 431
＂Standishi，Parlatore． ..... 40S
＂variegata，Murt． ..... 103
glauce，Hort ..... 52
Huteli，Mart． ..... 405
hyboredre．Hort． ..... 362
incryutis，Desfontain ..... 117
dajoniert，Hort． ..... 53
．＂Maximowicz ..... 408
liseats，Poiret ..... 126
．，Ietcundulafolia，Poi－ ..... 126
Loね\＆ii，Veiteh ..... 402
，atrovirens，Smith ..... 430
－differa．Smith ..... 431
－．erecte，Ilort ..... 413
：pumitu，Smith ..... 431
zarientra．Hurt ..... 403
Lublivent，Hort ..... 402
Meldensis，frouch Giar． denis ..... 57
Ifenstisii，Drurlas ..... 402
merustrnert．Hurt ..... 52
miano，W．laul ..... 101
nuure，Hort． ..... 53
nunu，Hort． ..... 401
－．＂allicu，Hort ..... 51
N＂；̈alinsis，Hort ..... 52
S＇uttalliana，Douglas ..... 181
ohtust，Manch ..... 403
Oceidentalis，Limeans ..... 413
＂alba，Marooll． ..... 431
，＂argentea，Carric）． ..... 404
＂asplenifotit，Hort． ..... 40
 vell ．．．．．．．．．．．．．．．．．． 431 compacka，Standish ． 404 ＂Knight ．．． 406 comparta，R．S＇mith 404 eristata，C＇ripps．．．．．． 404 densa，Gordon ．．．．．．40t dumosa，Hort．．．．．．． 401 ericoides，Hort．．．．．．． 362 globosa，Hort．．．．．．． 405
gracilis，Scott ．．．．．．．．． 431
Hoveyi，Hort．．．．．．． 405
nana，Hort．．．．．．．．．． 401
mlicata，London．．．．．． 406
pendula，Gordon ．．． 405
variegata，Loudon．．．40G
Vervaencana，Hort． 406
Walthamensis，Yaul． 406
Wareana，Knight．．． 409
odorata，Marsh ．．．．．．．．．．．． 406
Orientalis，Linnæus ．．．．．． 50
＂aurea nana，Hort．．． 51
＂compacta，Hort．．．．．． 53
cupressaides，Cels．．．． 55
Jagelliformıs，Jacques $5 \overline{5}$
Sieboldii，Endlieher 53
Tatarica，Lawson．．． 409
pendula，Lambert ．．．．．．．．． 55
pendulata，Hort．．．．．．．．．．．．． 55
pensilis，Staunton ．．．．．．．．． 126
plicata，Dom ．．．．．．．．．．．．．． 406
Lambert ．．．．．．．．．．．．．．．．． 402
clumosa，Hort．．．．．．．．． 401
Llaveana，Hort．．．．．． 401
minima，R．Smith．．． 408
pendula，Hort．．．．．．． 431
varicgata，Hort．．．．．． 407
prostrata，Hort．．．．．．．．．．．．． 401
pygmaea，Veitch ．．．．．．．．．．．． 369
，Hort．．．．．．．．．．．．．．．．．．．．．． 401
pyramidalis，Tenore ．．．．．． 409
quadrangularis，Ventenat 417
recurvata nana，Hort．．．．．． 401
Sibivica，Linneus ．．．．．．．．． 409
＂compracta，Knight ．．． 409
＂monstiosa，Knight．．． 52
Wareana，Hort．．．．．． 409
spharoidalis，Richard．．．．． 71
THじJ． This
spheroidea，Hort ..... 71
＂nana，Hort． ..... 73
，raricequatu，Hort． ..... 72
Standishi，Gordon ..... $40 s$
stricta，Hort ..... 53
Tatariea，Loddiges ..... 409
＂Wareana，Hurt ..... 403
etragonu，Hooker ..... 183
Theopluresti，Bauhin ..... 443
verrieguta，Marsh ..... 406
＂Hort ..... 51
Vervaeneand，Van Geert ..... 406
Trareana，Buoth ..... 406
Hort ..... 109
variegata，Hort
variegata，Hort ..... 407 ..... 407
TORREYA，Arnott ..... 410
Californiea，Torvey ..... 410
！randis，F゙ortune ..... 71
Humboldti，Knight． ..... 355
Montana，Hort． ..... 412
myristica，Hooker． ..... 410
nucifera，Zuccarini ..... 411
taxifolia，Arnult ..... 412
7＇snja Brunonima，C＇arriere ..... 21
Cunadensis，Carrière ..... 22
nonce，Carric̀re ..... 23
Douglasii，Carrière ..... 24
Hookeriana，Carriere ..... 30
Lindleyana，lioezl ..... 25
Mertersiana，Curière ..... 29
Sieboldii，Carrierre ..... 32
Waskingtonia gigantea，of the
Amerieans ..... 415
Californica，Winslow ..... 415
WELLINGTONIA，Lindley． ..... 414
gigantea，Liudley． ..... 415
gigantea variegata，Hort． ..... 416
gigantea aurea variegata，II artlend＊
WIDDRLNGTONIA，End－ licher． ..... 416
Commersonii，Endlicher． ..... 417
cupressoides，Endlicher．． ..... 417
erncoides，Knight． ..... 363
slanect，Carriere ..... 417
juniperoides，Endlicher．． ..... 418
Natalensis，Endlichei． ..... 419
Walliehii，Enellicher ..... 410

This variety，which should have been deseribed at page－116，is very fue and constant；about a third of tho branchlets are of a pulc goldin ycllow when they first appear，after which they gradually change to a delicate and perma． nent straw colour．It was raised by Mr．I．Hartland of the Lough Nurserics， Cork，ind is onc of the timest variegated Conifers which we at present possess．
INDEX OF POPULAR NAMES.
Exioh-h ANm Furfics.
 Siredish, Polish, IInngarien, Detik, Flemish, Ireach, Itmian, and Sjemish.

** The names betwern brackets are transtations of Chinese, Tapanene and rithor Tems. The mane's printed in Ilulies indi- "ate Loealities or Langitages.
Abiru. Italinn. Picea pectinata Common Silver Fir.
riva ..... 209Ibysinita Jeneer. Ab perinin. Juniperus procera
162
Ietmisite Sill in River: Cirrise. Actinestrobus Acuminatum - ..... : 11
Inventimi-Bas l'ine. Tasma iur. Phyllocladus rhomboidalis - ..... 1!):
Ifrichs or Athantic Cedaf. Allig liminge $N$. Afrioh. Cedrus Itlantica ..... 19
 ..... 416
leath-TiNxL. (ifiman. Dammara Orientalis. Amboyna Pine ..... 111
duriua Llatox. Wild Fir.) C'ephatonies. Picea Ipollinis. Mount Encis Fir ..... 197
 flowered Japan Pinc ..... 2:3:3
Ak-cmirschal. Turtury, Picea Pichta. Siberian Silver Fir ..... 22)
Alcock Sprivee. Jopan. Abies Allocquiana ..... 4
Alefro or Jemeadem Pine. Sirily amd Ciruce. Pinus Hale- pensis ..... 236
Aleraces. Burlictm. Callitris quadrivalvis. Iointed Arhor-vita ..... 58
Ilerse. Sjpmish. Pinh; Larix. The Larch ..... 168
Alenze. Chili and the Curdillerat. Libucedrus tetrigona. Tctragonal Artmr-Vita ..... 183
Afrene Pife. Pintrs Duntusa or Abies Brunomian:a ..... 21
Altaine Lahle. Larix Ledebourii ..... 173
Alvies. Siviss. Pinus Cembra. Swiss Stone Pine
rage
295
295
Andoyna Pine or Pitcif Tree. Dammara Orientalis ..... 111
A
A Americin Arpor-vite. Canada. Thuja Occidentalis ..... 403
Aherican Larich, the Black. Larix pendula ..... 177
American Silver Fir. North Ameriea. Picea Balsamea ..... 200
American Spruce Fir, Black. Abies Nigia ..... 13
American Cellow Pine. Nein Jersey. Pinus mitis ..... $2 \cdot 43$
Aherdikanschid Treur-Larix. Dutch. Larix Europæa pendula. Godsall's Weeping Larels ..... 170
Anunder. Himalaya. P'inus longifolia. Long-leaved Pine ..... 275
Aphernotsli. Rhatian Alps. Pinus Cembra. Swiss Stone Pinc ..... 295
Aprofenyo. IIungatian. Juniperns communis. Common Juniper ..... 131
Aralla. S'avoy. Pinus Cembra. Siwiss Stone Pine ..... 295
Arar. Roman. Cedrus. The Cedar ..... 59
Araragi(Yew-like). Japan. Abies Tsuga. Japan Hemlock Spruce ..... 32
Araragii. Japar. Taxus cuspidata. Abrupt-pointed Yew ..... 394
Amaz. Ifebreu. Cedrus. Cedar ..... 59
Araza. Roman. Cedrus. Cedar ..... 5.1
Arbor Vitse ('Tree of Life). North America. Thuja Occidenta- lis ..... - 400 心. 406
Arsme aux quibante ecus. French. Salisburia adiantifolia. Maiden-hair tree ..... 374
Arbre de Vie. Fiench. Arbor Vitr. Thinja Oceidentalis. Ancrican Arbor Vitre - ..... 400
Arbre de Vie í large feunices. Fivench. Thujopsis clolabrata ..... $3: 98$
Archangel Larch. Russie. Larix Ledebourii ..... 173
Arctic Spruce Fir. Abies rubra ..... 17
Arditsch. Turkish. Juniperus communis. Common Juniper ..... 131
Asso. Nepand. Juniperus recurva. Drooping findian Juniper ..... 147
Ars. Russian. Juniperus Davurici. Daurian Juniper ..... 141
Artn. Northem Italy. Pinus Combra. Swiss Stone Pine ..... 295
Artsh. Tussiun. Juniperns Sabina. Common Savin ..... 150
Arve or Arvel. Gíman. Pinus Cembra. Swiss Stone Pine ..... 205
Arz. Aralic. Cedrus. Cedar ..... 5.9
Asurf. Japan. Thuiopsis dolabrata. Hatchet-leaved Arbor Titie- ..... 398
Asu-naro (white underneath). Japain. Thuiopsis dolabrata. Hatchet-leaved Arbor Vite - ..... 398
australian Frenela. Frencla Australis - ..... 117
austrian Pine. Lowet Austria. Pinus Austriaca ..... 220
Auvier. F'rench. Pinus Cembra. Swiss Stone Pine ..... 295
Ayichiulte Mécico. Pinus Ayacahuite, also Loudoniana,
Loudon's l'ine - . . . . 292 \& 311
Mybmea, Jaca. Poducarpus bracteata. Practeated Podocarpus ..... 328
Azores Jumiper. Juniperus Cedrus brevifulia ..... 130
Biald CYpress, C'medine!. Taxodium distichum. Deciduols
Cypress ..... $3 \varsigma 2$
Balfour's Pial. Cialigurnia. Finus Balfouriana - ..... 293
Ealm of Gilead Fir. Newth Americr!. Picea balsameat ..... 200
B.llsems-par. Dutch. Picea Balsamea. Balu of Gilead Fir ..... 2015
Basya-Tinys or Baza-tusza. Australia. Araucaria Bidwillii. Bidwill's Araucaria ..... 36
Bastun Crmar. Califurmia. Sequoia sempervirens. Califomian Redwood ..... 379
Beeter, Bethi, or Better. Himalayer. Juniperus delisa. Bushy Indian Juniper ..... 141
BrarteN-Rečs (Giant of the Forest). Dutih. Wellingtonia gi- gantea. Mamuoth Tree ..... 41.5
Bestinkifer. German. Pinus Iustralis. Southern or Swamp Pine - ..... 2011
Bital: Joll lant. Pinns sylvestri: seotch f゙ir - ..... 207
 leaved Nepaul Jumper - ..... 152
Bhotis Pise. Nepaul. l'inus exceloa. Lofty Bhotan Pine ..... 299
Brakklos. Jupen. Juniperus Chinensis. Chineso Juniper ..... 158
Biegsami: Anve. Ger... in. P'inus thexilis. Plable-branched Pine ..... 302
Brechors-Kiefer. Germert. Pinus muricata. Bisherp's Pine ..... 246
Bonors Pine. Culifurnio. Pinus Muricata ..... 246
 ..... 229
Brtck ('mpe-s. Amerina. Taxodium distichum. Deciduous Cypros ..... 352
Boぃк Fiu. Bhotori. Dicea Vebbiana. Webb's Indian Fin' ..... 227
libuk Lise.11. Can lin, etc. Larix pendula. Black Ameriean Larch ..... 177
Bhick Yine Chwa. Pinus Massoniani. Mason's Japan Pine ..... 211
Eluk Srkuce Fir. dioth America. Ibies nigra ..... 13
Pranert. Indi". Taxus baceata. Common Tew - ..... 389
Brazll Pine. Araucaria Brasiliensis. Brasil Araucaria ..... $3 i$
Brtsf or Rriac. Nomeerian. Juniperus communis. Common Juniper ..... 131
Bra-HNeUsE: Fiench. Dbies Brunomiana. Indian Hemlock Sprinec ..... 2)
Broom Pinen America. Pinus Australis. Southem or Swanp parir
Eine - ..... 260
Bull Pine. Ameirica. Pinus ponderosa. Heavy-wooded Pine ..... 281
Buonalarte's Pine. Menico. Pinus Buonapartea ..... 29.4
Cade. French. Juniperus Cedrus. Canary Jsland Juniper ..... 129
Caju Medmambula. Borneo. Nageia Becearii. Beceari's Bornco Nagi - ..... - 186
Cllabran Clustra Pine. Pinus Brutia - ..... 232
Calmornian Fir. Abies Pattoniana. Patton's Califumian Fir ..... 30
Qalifolinhan Hemlock Spruce. Abics Mertensiana ..... 20
Ualifolnian Mammotil inee. Wellingtonia gigantea ..... -415
Californian Mountali Pine. Pinus monticola - ..... -31 +
Califolnische Beigkiefer. G'erman. Pinus mionticola. Houn- tain Pine ..... - $31 \cdot 1$
Cinimlan or North American Yew. Taxus Camadensis ..... - 333
Clinadian Balsam, or Baliu of Gilead Fir. Picea balsamea ..... - 200
Cavary Island Pine. Piuus Canarionsis - ..... - 264
Uaxdle-wood. Meaico. Pinus Teocote alsu Leiophylla. Smooth- leaved Mex̌ican Pine - - - - 28 -305
Cabper or Prostrate Juntple. America. Juniperus prostrata.Prostrate-branched Juniper -- 146
Casazrija. Russian. Juniperus Sabina. Common Savin ..... 150
Cedír of Co.s. Cupressus Lusitanica ..... 89
Cedar or Lemanon. Mount Lebanon. Cedrus Libani ..... 65
Cedile, the Japan. Cryptomeria Taponice. Japan Cedar ..... 74
Casnur, the Wuite. Chamweyparis. White Cedar ..... 70
L'sd.Ar-Boon or Broon. C'ape of Good MIope. Widdringtomia Juni- peroides ..... 418
(Eeder, Indische. Dutch. Cedrus Deodara. Indian Cedar ..... 61
Ceder von Cios. Gécman. Cupressus Lusitanica. Cedar of Cuat ..... 8!
Cedre de l'Lnde. French. Cedrus Deodara. Deodar, or Iudian Cedar ..... 61
Cedre du Tiban ou Cedrelite. P'rench. Cedrus Libani. Cedar of Lebanon - ..... 65
Cenro. Mexico. Juniperus Cedrus brevifolia, The Azores Juniper. also Juniperus Mexieana, Mexican Sandarae Juniper 130 d 161
Celery-toppey Pine. Tasmania. Phylloeladus Rhomboidalis ..... 19.1
Cembra, or Sifiss Stone Pine. Pinus Cembra ..... 295
Cembrot. French. Pinus Cembra. Swiss Stome Pine ..... 295
Chadsulea (green and white). Mongolia. Picea Cilicica. Cilician Silver Fir ..... 214
Changathash-Dhuop. N' $\epsilon_{\rho}$ anl. Manse Tree. Abies Brunoniana. Indian Hemlock Spruce ..... 21
L'hatoona. Cashmit. Red Dye. Taxua Wallichiana. Wallich's Yew. ..... 396
C'reecrins. Himalayn. Juniperus densa. Bushy Jndian Juniper ..... 141
Chell, Cineer, or Chir. Mimulayu. Pinus longifolia. Long-leaved Pine. ..... 275
Cifili Arbor. Vitae. Libocedrus Chilensis - ..... 180
Chul Pine. Clitian Andes. Araucaria Imbricata. Monkey Puzzle ..... 89
C'nlarow. Forthen" IIincliynts. Picea W'ebhiana. Webl's Indian I'ir- ..... 226
Cimnear Arbun: Vira: Biota Orientalis ..... 50
Cimaree Pixf. Pinu, Sinensios ..... - $2 \pi 6$
('nivise Juniper. Junipertas Chinensis ..... 154
Cuinese Water Pine. Olypto-truhus hete ophiglliey ..... 120
Cilosiuso. Je *e. Pendocarpu- Cupressina. Cypress-like Pulo. сагриз ..... 3.7
('mopks. Dhotun. Juniperus Religiona. Pencil or [ncense Juniper ..... 149
('mintini I)tal. Pinus Sylvestris. Scotch Fir ..... 257
('mpistan Tree. - Lbics excel-it communis. Common Numay Ninuce ..... 6
 ..... 141
('ipmemsuan. Dmith. Cymeas Tree ..... 78
 ..... 66
Coteter I'ixe. Italy. A夕 mine, efic. Pinus l'inaster. Sitar P'ile ..... 2.9
Comsicin or C'ilubhan P'sás P'orsich. I'inus Laricio ..... 23:)
Cortrin Pise. Cuivec. Pime Pilaster minor ..... 2.51
Cowrex. Sire Zocaland. Demunars Au-trali. Kauri Pis: or Ňew \%aland Pitch 'Tree ..... 104
('racow It sipis. Junizerus commmia ('racoria ..... 132
 Scaly-leaved Xepaul Junipur ..... 1.. 1
 trollus. 'Thujas, cte. ..... is
 ..... 4
(1) plat. F'rach. ('ypress ..... is
 Werping on loneral Cypens ..... 02
 tichun ..... 322
piof
Cypress, tier Native. Tan Diemen's Land. Frenela Gunnii Gunn's Frenela ..... 1211
Cypressen. German. Cupressinez. True Cyprectses ..... \%
Cypresses, the True. Cupressineer ..... - 78-102
Dammar. Malay. Dammara Orientalis. Amboyna Pine ..... 111
Damdiar, or puti, or batu. Malay. Dammara ..... 1に
Deckbletterige Weisstanne. Giermun. Pieen bractenta. Leafy- braeted Silver Fir ..... 202
Den, or Dennenboom. Dutch. Pinaceæ. Fir or Pine Tree ..... xi
Deodar (Tree of Giod). Himalaya. Cedrus Deodara. Himalayan Pine, also ealled Iudian Cedar ..... 61
Derva, Devadaru, Defar, ete. Cedrus Deodara. Indian Cedar ..... 61
Dircyri. A'ppaul. 'Taxus Wallichiaua. Wallieh's Yew - ..... 396
Diroop. N'epure. Incense Juniper: Juniperus Teligiosa, Pencil or Incense Jniper ..... 140
Diohtrletterige Kiefer. Geiman. Pinus densiflora. Dense- flowered Japan Pinc- ..... 233
Digger Pine. California. Pinus Sabiuiana. Sabine's Pine ..... 28.1
Dium, or Rium. Nery Zealand. Native Spruee. Dacrydiun Cupressinum. Cypress-like Dacrydium ..... 101
Double-Balsam Fir. N. America. Picea Fraseri. Fraser's Silver
Fir -Doevere Srrece. Canala. Abies nigra. Blaek Spruce Fir - 13
Douglas Fir. Califormi\%. Abies Douglasii ..... 2.1
Driebladige lage Den. Dutch. Pinus inops. New Jersey Pine ..... 238
Drubstee Cipresse. German. Cupressus Mamabiana. Mae- Nab's Cypress ..... $9(1$
Duen-xadelige Kiefer. German. Pinus tennifolia, Slender- leaved Pine - ..... $32 \cdot$
Duen-nastige Cypresse. German. Cupressus attenuata. Atten- uated-branehletted Cypress - ..... 75
Dwarf Cembra Pine. Siberia. Pinus Cembra pygmaa - ..... 297
Dwarf Conical Common Spruct. Abics excelsa strieta ..... 11
Dwarf Corsican Piye. Pinus Laricio pygmaa ..... 211
Dwarf Cypress. Cupressus Lawsoniama mana. Lawson's ('y. press - ..... 8
Diwarf Golden Arebor Vitte. Pinta Orientalis aurca ..... 50
Dware Hatchet-leaved Arbor Vite. Thuiopsis dolahrata ..... 339
nana
nana
Dwarf Japan Cedar. Cryptomeria Japoniea nama. ..... 76
Dwarf Japan Cypress. Pictinospora obtusa nama ..... 428
Dwarf Japay Golden Cypress. Retinospora obtusa naua aurea ..... 428
Dwarp Jumiper. Portugal. Juniperas nana ..... pacs
Dwarf Pine. Japan. Pinus parviftora. Small-flowered Japan Pine - ..... 317
Dwarf Red Cedar. Jumiperus Virginiana humilis ..... 156
Dware Suvis Irxiper. Juniperus Sabina nana. ..... 1.51
Dwarf Spruce. Abies excelsa Clanbrasiliana. Clanbrasil Spruce ..... 7
Dwarf Weymouti Pine. C'unulce. Pinus Strobus nana ..... 323
Dwarf White Spiuce. Abies alba mana - ..... 4
Dwerg-boompse. Dutch. Biota Orientalis aurea. Dwarf Golden Arbor Vitat - ..... 60
Dwarg-Spar. Duch. Picea Fraseri Iudsonica, Dwarf Silver Fir ..... 206
Edeltanne. Grman. Picca Pectinata. Common Silver Fir ..... 209
Ediblr. Pise Nut. Pimus Geran lima. Gerard's Pine ..... 204
Dobli. Prane. Pims Crerar lima. Cierards Jine
Dobli. Prane. Pims Crerar lima. Cierards Jine Ldle Kierer. Germetr. Yinns In-igniw. Jemarkable Pine ..... 207
Edde Hersspanize. German. Hicea molvili* Noble Silver Fir ..... 207
Eibe, or lifleaba M. Germen. Taxis baccata. Common lew. ..... 3-4
Embosere Crpress. Chine. Glyptostrubus ..... 126;
Ehodi-Kieper. Gírmar. I'inus Jongifolia. Long-leaved Pine ..... 275
En. Sueetish. Juniperus communis. Comınom Juniper - ..... 1.1
 Common Juniper ..... 131
Evenno. Śpenish. Iuniperns C'c lrus. Chary Island Juniper - ..... 129
Eprea. Freach. Abics Excelsa. Common Norway Surue, ete.
©
©
Epliette Á la Buere. F'renche Ibics nigra. Black or jomble Spruce
10
10
Trinette mlasene. Fronch. Ahics alba. White Spruce lior ..... :
Pipinette rouere. Fiench. Jariv Mieruc. ipa. Thel American
$1: \%$Einsoye. Jarch Podocarpus bracteata. Bracteated Pudocarpus -
Elponocirpes. Fiench. The True Poducarls ..... 32~
Fanenaletterige Kienee. Cerman. Pimes filifolia. Thread- leaved Pine .
301
301
False Araveniria. Australice. Arancaria excelsa, etc.
43
43
Fiux-Melfize. Fi,moh. Pamin-Larix Kampferi. Golden or Chinese Larelı ..... $36!$
Fiejee Islind Dammari. Dammara Vitiehsis
113
113
Fexio Gyalog fenio. Hunghriun. Jnninemas communis. C'ummon Juniper
131
131
Eelcht-tanere Cierman. Abies excelar. Common Norway
Spruce
Ficute. Cirman. Abies execlsa. Commen Norway Spruce ..... © ..... © ..... 6
Fr-Koja. Slender Yew, Jupun. Torreya Nucifera. Nut-hear- Prising Torreya
Eime-gajo-Matsu. Jeporid. Disarf fivc-leaved Pile. Pinus parviflora. Flowered Japan Pine ..... 317
Fian Thice. (Dwarf Yew-leaved Spmee). Japan. Abies Tsuga nana. Dwarf Tssuga Spruce ..... 33
Fr-moro (Weeping or pendulous). Chena. Cupressus Corneyana. Coruey's C'binese Cypress ..... 80
Fr-miono Hiba (Slender or drooping). Jupan. Biota pendula. Weeping Arbor Vite ..... 55
Fit-̀окi. Japan. Dwarf, or compact tree or slirub. Biota Oricntalis, ctc. ..... 51)
Fi-xokt-stea, Japan. Slender Evergreen. Juniperus Chi- nensis. Chinese .Juniper ..... 158
Fir-reere. Simm. Abies Smithima. Indian Spruce Lir - ..... 19
Fir Treers. Abietinex, ete. ..... xi
Fr-Suga (Dwarf Evergreen). China. Cryptomeria Japonici nana. Dwarf Japan Cedar ..... 76
Fitoxs-matsu (Single-leaved Pine). Tapan. Pinus Massoniana. Masson's Japan Pinc ..... 241
Fo-bi-sso, Chinese. Picea firma, Japan Silrer Fir ..... 204
Ferine. German. Pinus Sylvestris. Seotch Fir - ..... 257
Fefataxe French. Torreya or Stinking Yews ..... 410-413
Foon-Maki (Truc Maki). Chinct. Podocarpus merophylla. Long- leaved Podocarpus ..... 340
Forest Tree of Moray. Pinus Sylvestris. Scoteh Fir - ..... 257
Franimeesise or Torch Pine, Southern States of America. Pinus Tæda, Loblolly Pine ..... 287
Franhincense White Cedar. N. America. Chamaeyparis ..... 70
Frexile de Desfontaines. French. Callitris quadrivalvis. Jointed Arbor Vitre - ..... 58
Frenètes. French. Frenela. New Folland Conifers ..... 116
Funeral Cypress. China. Cupressus Funebris. ..... 82
Furi-hiras (Two-colonred Tree of Life). Jenzan. Biota Orientalis variegata. Variegated Chinese Arbor Yite ..... 51
Fusis or Fussi (buds crowned with leares). Japene. Psendo-Larix Kiompferi. Golden, or Chinese Larelı ..... 4611
Fust-kin-go (buds crowned with leaves in summer). Jetran. Salis- buria adimutifolia. Maiden-hair Tree ..... 374
Fusi-Miatsu (pino full of buds). J(puch. Larix leptolepis. Slender-sealed Japran Larch ..... 173
Fust-xo-Ki (Tree of the Sun). Jtiprair. Retinospora obtusa. Obtusc-leaved Japan Cypress ..... 377
pageGavbrnur. Sumatra. Dacrydium elatum. Lofty Daerydium
luj
Gai-sI-haK (white on the under side, Tree of Life). China. Thuionsis dolabratt. Hatchet-leaved Arbor Vite ..... $39 \cdot ;$
(iAskis. Letplund. Juniperus commmis. Common Juniper ..... 1.31
Ciledrentitstigi: Kiefer. (fioman. Pinus contorta. Twisted- branched Pine ..... 232
Cierline t (yellow wood). Dutch C'rese. Podocarpus Thunbugii. Thunberg's Podocarpus
3.19
3.19
Geminrifrs. fiench. Junipers in general ..... 131
(ienevtidr a Groa Fretts. Fre che Juniperns macrocarpa. Purple-fruited Juniper
135
135
Gevistafe Comares. Fiench. Juniperus nana. Dwarf ofuniper ..... 136
 fcumins ..... 155
Cextvaren Touffe. Fremil. Juniperus denar. Babhy In lian Juniper
$1+1$
$1+1$
Gimone crove Den. Duth. Pinus Eslvestris. The Sentch Fir ..... 257
Ghwune Imvexsbooy. Dut\%. Thuja Oceidutalis. American Albur Vite
$4(6)$
$4(6)$
Giunvric Prini. Califurmin. Pinu Lambertiana Lambert's Pine ..... 307
(iss us (Decidnous). Jaj \% S la-buria adiantifola. Maden- hair Tree .....
374 .....
374
Firiarro. Iialuan. Juniperus communi: Common Tuniper -
131
131
(instio or (insekr-go (le, thes in winter). Flince. Salisburia adiantifolia. Maidel-lair Tree ..... 834
Gliedrr-I'fitre. Gemmen. Arthrotixis. Ininted Y゙ew -
40
40
 hiana. Wecbb's Indian Fir - ..... 226
Gioldrs Ahmer Vitee. Biota Orientalis aureq
311
311
Golden ('rpresos. Jiota Orientalis aurea ..... 50
Colnent Lircif. Jufurs. Peudo-larix Kiempferi
$30{ }^{\circ}$
$30{ }^{\circ}$
Gold-starled lew. Taxis baceata argentea ..... 25s
Googrial (Incense). (ro-hmer. Juniperus squaninta. Scaly- leaved NTepaul Juniper
152
152
 Pencil or Incense Juniper
Gorsor, I'uesian. Juniperus Sabina. Common Savin
34:
34:
150)
(i)-s, 心-sJu. Chiar. Pinus parvitora. Simall-flowered Japan Pine Goyuso-II uth (five-leased). J (I) (th. Pinus jarvifora, Simall- ..... 317flowerd Japan Pine317
Gran. Sivedish. Abies excelsa. Common Norwny Spruce
PAGEGrenbaum. German. Abics cxeclsa. Common Norway Spruce.6
Grey Pine. Americen. Pinus Banksiana. Sir Joseph Banks's Pine. ..... 250
Griechische Weisstanne. Gicimun. Picea Cephalonica. Mount Enos Fir ..... 203
Grosszapfige Cypreesse. German. C'upressus macrocarpa. Lam- bert's Cypress ..... 31
Guatemala Cypress. Cupressus Excelsa. Tall Guatcmala Cypress ..... 82
Guatemala-Cypresse. Geiman. Cupressus excelsa ..... 82
Gulla. II imalaya. Pinus longifolia. Long-leaved Pine ..... 275
Gulla, or Gulrai (Divine Trec). Simlr. Cupressus tortulosa. Twisted or Bhotan Cypress ..... 97
Gum Spruce. Canada. Abies nigra. Black Spruce Fir - ..... 13
Mabual. Asic Minor. Juniperus Drupacea. Plum-íruted Juniper ..... 133
Har-sunc-tse (Maritime Pinc). Chince. Pinus Koraiensis. Corean Pine ..... 306
Hak (Tree of Life, or Evergrecn), a term applical to all the Arbor- Vitos in China. ..... 398, ctc.
Haren Kiefer. German. Pinus Mugho. The Mugho Pine ..... 2.14
Hakmatack. North America, C'anarlu, ctc. Larix pondula. Black American Larch ..... 177
Hangende Kiefer. Germair. Pinus Pincema. Pince's Mexican Pine - ..... $\cong 80$
Harmington Tew. Cephalotaxus pedunculata. Long-stalked Cephalotaxus ..... 69
Harz Kiefer. German. Pinus resinosa. Resinous or Red American Pine ..... 250
Heavy-wooded Pise. Californica. Pinus pondcrosia ..... 281
Hedgehog White Spruce. Canala. Abies Alba minima ..... 4
Hemeron Elaton (Tame Fir). Arcadia. Pica Apollinis. A pollo Silver Fir ..... 197
Hemlock Spar. Dutch. Abics Canadensis. Hemlock Spruce ..... 22
Hemlock Spruce. North America. Abies Canadensis ..... 22
Hemlocks-tannen. German. Abies 'I'suga, Canadensis, etc. - 21-32
Hen-hak. China. Retinospori obtusi. Obtuse-leaved JapanCypress367
He-sung-tse, Chinese. Pinns Massoniana. Masson's Japan Pine: ..... 241Hishle yi- Fichite. German. Abies Simithiana. Indian SpruceFir
Hibl (Tree of Life). J/ty, Ban. Biota. Chinese Arbor Vite ..... 19
Hecilland Pine. Pinus Sylvestris horizontalis ..... 49 ..... 253
Hirokl-mb.l. Jupaz. Biota pendula. Weeping Atrbor Vite
Hirokl-mb.l. Jupaz. Biota pendula. Weeping Atrbor Vite
Himalifan or Iydiny Spreve Fif. St Vhem India. Abies Smithiana
12
12
Hime Tsucin (Dwarf Yocw-leaved Spruce). J(tyun. Abies Tsuga nama. Dwarf Tsuga Spruce
$3: 3$
$3: 3$
Ht-so-kl (Slenhly shrub). China. Biota pendula. Weeping Arbor Titue -
5
5
Hinoki (Tree of the Sun). Japana. Rectinospora obtusa. Obtuse- leaved Japan Cypreso ..... 368
Ioary Freenela. New Hollied. Frenela canescens
115
115
Hoeckerige Kiefer. Gérman. Piulus tuberculata. Tuberculated Cune Pilue
298
298
Horige Kleqer. German. Pinus cornea. Horn-shaped coned
Pine.
297
297
Hudson's Biy Plas. Forth Ameria. Pinus Banksiana. Sir Juscph Banks's Pine
230
230
Huoy Pine Tasmanio. Dacrydinu Frauklinii. Franklin's Da- erydium, or Huon line
106
106
If. French. Taxus baceata. Common Jew
3 y '
3 y '
Iorlferlex: German. Pinus Pinaster. Star or Chuster Piue ..... -49
Ikaling. Mimalaya. Taxus Wallichiana
Ikaling. Mimalaya. Taxus Wallichiana
397
397
Incesse-bearing C'yprea. Cupremus thurifera
100
100
Inceise Cediar Liboedinas
Inceise Cediar Liboedinas .....
179 .....
179
Indlin Cedir. Cedrus Deodara
Indlin Cedir. Cedrus Deodara
61
61
Ladias Cypmese Cupre sus Whitleyaua
162
162
Tndiay Hemlock Sphece. Abies Brunoniana
21
21
Isdan silver I'r. Siklim. Picea Hebliaua .....
227 .....
227
Indhan Smecte Fie. Abies Smitbiama
Indhan Smecte Fie. Abies Smitbiama
19
19
Indischiz Zilverie Den. Dutch. Pirea Piuchunt: Indan Silver Iïr
22 M
22 M Intermadhate lile, Abies Fortunci Intermadhate lile, Abies Fortunci
27
27
Inckus (not wild but cultivated). Jupuru. C'ephalotaxus l'edun- culata. Long-stalkel Cer Malotaxus
(G)
(G)
Iveki (wild or native). C'hina. Juniperus Chinensis. Chinese
L.NE-MAKI (false or wild Maki). Japan. Podocarpus Clinensis, ..... $15:$and Macrophylla. Chinese Podoearpus, and Sciadopity'sverticillata. Tariegnted Parasol Fir
Iersen Juaiper. Juniperus comnunis IFibernica ..... 132
pacr
Imisil Yew. Taxus baccata fastigiata ..... 390
Italian Stone Pine. Italy. Pinus Pinea ..... 252
Italienische Schwartz-Kiefer. German. Pinus Laricio. Corsican Pine ..... 239
I'ro-suga (Slender or cord-branched Evergreen). Jepun. Biota pendula. Wecping Arbor Vits ..... 50
Jalowiec. Polish. Juniperus communis. Common Jimiper ..... 1.31
Jaran Cedar. China and Japan. Cryptomeria Japoniea ..... 7.3
Japan Hfalock Spruce. Abies Tsuga ..... 32
Japan Laurel. Nageia Japonica ..... 185
Jeneverbes. Dutch. Juniperus communis. Common Juniper - ..... 131
Jersey, or New Jersey Pine. Pinus inops ..... 235
Jezo-Matsu. Japan. Abies Jezoensis. Jesso Fir ..... 12
Jezo-Momi. Japan. Picea firma. Japan Silver Fir ..... 205
Jo-bi-sjo (Native Fir). China. Lbies polita. Tiger's Tail Spruce ..... 10
Jornted Iews. Van Diemen's Land. Arthrotaxis ..... 46
Joya Kiefer. German. Pinus patula. Spreading-leaved Mexican Pine - ..... 278
Junipers. Juniperus, Oxycedrus, cte. ..... 127-167
Kaeel or Kail (a sort of Pinc). חimalaya. Pinus excelsa. Lofty Blotan Pine ..... 299
Kaiki-Katea (IVater Pine). New Zealand. Podocarpus Dacry- dioides. Dacrydium-like Podocarpus ..... 3,58
Kaja. Japan. Cephalotaxus drupacea. Drupaceous or Plum- fruited Ceplalotaxus ..... 68
Kaja-Ksa (Strong-scented Yew). Jupan. Torreya nucifera. Nut-bearing Torreya ..... 411
Fala-bun (Black Forest). Himalaya. Picea Pindrow. Upright Indian Silver Fir ..... 223
Fala-rai (Black Fir). Ifimalaya. Picea Pindrow. Upright Indian Silver Fir ..... 229
Kamejor-velesk. I'ussiur. Juniperus Sabina. Common Savin ..... $150)$
Kantschatka Larcif. Larix Kamtschatica ..... 17:
Kara-ilats (Pine full of buds). China. Pseudo-Larix Kremp- feri. Golden or Chinese Larch ..... 361
Kara-Schersie (warted branches). T'artary, Abies Obovatia. Obovate-coned Siberian Spruce ..... 15
Fataju. Finland. Juniperus commonis. Common Juniper ..... 131
Kauri-Ficmte. German. Dammara Australis. Kauri Pine ..... 109
Kauri, Kouni or Kowri. A'ew Źeuland. Dammara Australis ..... 109
Kawaka. New Zeüland. Libocedrus Doniana. Don's New Zea- land Arbor Vita
pace:
Tikdr. Iussian. Pinus Cembra. Swiss Stone Pine ..... 182 ..... 182
Kelmung (Resinous). Himalayu. Cedrus Deodara. Indiau Cedar
63
63
Keloy, Kelou, Kele, Koliy or Kiolan. Himalaya. Cedrus Deodara. Indian Cedar ..... 63
Keresztes-tencyo. Hungariun. Abies excelsa. Common Norway Spruce
6
6
Kinutnorr: Ilimalcya. Abies Smithiana. Indian Spruce Fir ..... 19
Kiefer. Gímar. The Common nane for the Pine ..... 225
Kiffer. Ninthern Germuny. Abies Excelsa. Common Norway
6
6
Kienuacar. Cicmaten. Abice Fxecesa. Common Norway Spruce ..... 6
Kien luacg-au (Skin or bark-shedding), China. Pinus Bun- geana. Chinese Lace-bark Pine ..... 20.1
Kıl. Indiur. Pinus Iongifolia. Long-leaved Pine
275
275
Klooritı. Iihotan. Pieea Webbiana. Webb's Indian Fir
226
226
Kimerak. Juere Puducarpus Amara. Bitter-fruited Podo- еагрия
Kimerak. Phitipmine Ieli* Poduca rpus Cupressina. Cypresso ..... 327 ..... 327
hite Podocapus
hite Podocapus
Kintencri: (Common Goldeu Pine). Clina. Peeudo-Larix kixmperi. Gulden or Chintse larch ..... 357 ..... 357
Kixs-sjo, or his-aunioMaki. Chiun. Pale Yellow Maki-
Kixs-sjo, or his-aunioMaki. Chiun. Pale Yellow Maki- Sciadupitys verticillata. Parasol Fir Sciadupitys verticillata. Parasol Fir ..... 378 ..... 378
Kin-tislay-sivg (Money Pine). Juzan. Larix Leptolepis. Slender-scaled Japau Lareh
$1 ; 3$
$1 ; 3$
Kitutrie. Philip pine Ieles. Podocarpus Cupressina Cypress- like Pudocarpus
357
357
Kjelanaci. India. Pinus Pumilio. Nountain Pine
253
253
Kleinbluthtee Arve Gicinan. Pinus parviflora. Small- flowerd Japan Pine
Kinee-Plne. Austria. Pinus Mugho nana ..... 317 ..... 317
Kvienolz. Gicmath. Pinus Pumilio. Mountain Pine ..... 245 ..... 245
KoJa-Mani. Jowne. Yew-like Maki. Sciadopitys verticillata. Whorl-leaved Sciadopitys, or Parasol Fir ..... 253 ..... 253
Kok-so-mat: (C'ummon Blick line!. C'lina. Pinus Pinaster. ..... $3: 8$ ..... $3: 8$
Stir or Cluster Piue
Kok-strac (Black line). C'hince. Pinus Massoniana, Masson's Japan Pine.
Kosotega-silifa. Jupserr. Biota Orieutalis. Chinese Arbor Vita ..... 50 ..... $2+2$ ..... $2+2$
Koodrai, or Koodrow (TVeeping or Prickly Fir). Bhotur. Abies Smithiana. Iudian Spruce Fir ..... 20
Kouri or Cowri. Nen Zealand. Dammara Australis, Kauri Pine - ..... 103
Kranmtsbeer. Geiman. Jeniperus communis. Common Juniper ..... 131
Kriv.hwitt. German. Juniperus communis. Common Juniper ..... 131
Kroptaxus. Dutch. Cephalotaxus ..... 66
Krummholz. German. Pinus Pumilio. Nountain Pine ..... 253
Ksa-Maki (fetid Maki). Japan. Podocarpus Macroplyylla. Long-leaved Podoearpus ..... 310
Kukunaria. German. Picea Cephaloniea. Mount Enos Fir ..... 203
Kullain (Divine Tree). Simiu. Cupressus Tortulosa. Twisted or Bhotan Cypress ..... 98
Kuminche (Lesser Sweet-mut Pine). Thibet. Pinus Gerardiana. Gerard's Pine ..... 269
Kuos. Laplund. Abies excelsa. Common Norway Spruce ..... 6
Kuro-matsu (Blaek Pine). Japan. Pinus Massoniana. Mas- son's Japan Pine ..... 241
Kuruz. India. Pinus Webbiana. Webb's Tndian Fir - ..... 226
Kurzgeflugelte Kieplir. G'erman. Piuus brachyptera. Short Wing-seeded Pine ..... 26:3
Kus-Jak (Peneook's Feather). Japirn. Biota Orientalis Sie- boldii ..... 53
Kussuk. Tartary. Pinus Combra. Swiss Stone Pine : ..... $20 \%$
Kwa-furi-ifak (Variegated Tree of Life). Japan. Retinospora obtusa aurea. Golden variegated Japan Cypress - ..... 369
Labrador Pine. Pinus Banksima. Sir Joseph Banks's Pine ..... 320
Lace-fark Pine. China. Pinus Bungeana ..... 264
Lerbatin. German. Pinus Laricio. Corsican Pine ..... 239
Lambert's Cypress. California. Cupressus Lambertiana vel Maerocarpa - ..... 91
L.ambert's Junifer. N'epaul. Juniperus Lambertiana vel Squamata ..... 153
Lambert's Pine. Califormia. Pinus Lambertiana ..... 307
Lercue. Germen. Larix. Lareh ..... 168
Larch, for its varieties see Larix.
Larch Pine. Pinus Laricio ..... 239
Larice. Italicun. Larix Ledebourii. Altaian Lareh ..... 173
Lar, Llar. Celtic. Larch, Larix ..... 168
Latsche. Gorman. Pinus Pumilio. Mountain Pine ..... 253
Leem. Himutaya. Pinus Exeelsa. Lofty Bhotan Pine ..... 300
Leerbaun, or Lerchemtanie. German. Pinus Larix. Common Larch ..... 169
Leinbalar. Germen. Pinus Cembra. Swiss Stone Pine page
Leuri or Scrrı. India. Juniperus Execlsa or Religiosa. Pencil Cedar
148
148
Leversmonar. Dutch. Arbor Vitre. Tree of Life - ..... 400
Lewvi. Cushmere. Juniperus Religiosa or Excelsa. Pencil or Incense Juniper ..... 149
Lhala. Bhoten. Juniperus densa. Dense or Bushy Indian Juniper ..... 142
Libocedre. Fiprch. Libocedrus, Incense C'edar - ..... 170
Liebliche Wetsotanee. Círman. Picea amabilis. Lovely Silver Fir ..... 213
Li-kit-Munt. (Chinese Native Fir.) Jumen. Cunninghamia Sinensis. Chinese Cunninghamia -
77
77
Limba. Polisk. Pinus ('embrat Swiss Stone Pine ..... 205
Listvenitzi (C'rown of Leaves). Nussien. Larix Ledebumii, Altaian Larch ..... 173
Lleuvque. Chiti. Podocarpus Andina. Andes Podocarpus ..... 352
Loblolly, o) Oldfield Pine Firginin. Pinus Tieda ..... 286
Lo-man-sevg. Chinese. Podocarmus Chinensis. Chinese Podo- carpus
330
330
Lorst. N'jetut. Taxus Wratlichiana Wallich's Yew ..... 397
Loosint. Ilimelryel. Taxus Wallichiana. Wallich's Tew
397
397
Lecatzin. Californio. Abi s Mertenaiana. Californian Hem- lock Sprnce -
29
29
Lumafing, or Lexsumes. Bhotars. Pinus Excelsa. Lofty Bhotan Pine
209
209
Lusg-mu, or Kimi-luxg-xu. China. Pinus Bungeana Lace- bark Pine
263
263
Lutz fenio. Hitngarian. Abies Execlsa. Common Norway Spruce
6
6
Lychas Junirer. Juniperus Phonicea Ljecia ..... 165
Maits. China. All Pines, Junipers, and other Conifers with sharp needle-shaped leaves, are called Mats, Maats, orMatsu, by tho Chinese.
Mat, or Masal. Nmo Zomand. Podocarpus Spicata Spilic- flowered Podocarpus
354
Manen H.ure Tree, Salisburia adiantifolia
373
373
Mario or Miro, Neun Zealund. Podocarpus ferruginea Rusty- coloured Podocarpus
352
352
MAKT, a common name in China and Japan for all large-leaved, yew-like plants, such as Podocarpus, Sciadopitys, ctc. ..... $331)$
Makı. Chinco. Podocarpur, Sciadupitys, etc. ..... $330,3 \div 0,378$
Majoo (Nut-gall). NTepaul. Biota Orientalis gracilis
рияе
Maki-isa or Kaja-ksa. China. Strong-scented Yew. Torreya mucifera. Nut-bearing Torreya ..... 412
Mammotir Tree. California. Wellingtonia Gigantea ..... 415
Mammutifichte. German. Wellingtonia ggantea. Mammoth Tree - ..... 415
Maniu. Chili. Saxe-Gothæa conspiena. Remarkable Saxe- Gothæa ..... 372
Maniu Pino, or Masigul. Chill. Podoearpus Chilina. Chili Podocarpus - ..... 329
Mareilo. Culifornia. Picea Amabilis, Lovely Silver Fir ..... 21:
Marin. India. Abies Smithiana. Indian Spruce Fir ..... 19
Maritime Pine. Pinus Pinaster. Star or Cluster Pine ..... 249
Marro. Nevo Ifolland. Frencla robusta. Rubust Freuela ..... 124
Mats (True Pincs). (Chincu.) Pimns Sinensis, ete. ..... 286
Mats, Matz, or Matsu. Jupdi. All Pines, Junipers, and C'ypress- like plants with needle-shaped leaves.
Mélizae. French. Pinns Laricio. Corsican Pine ..... 239
Mélèze d’Amertque. F'rench. Latix pendula. Black American Lareh ..... 177
Múlize d'Eurore. French. Larix Europern. Common Lareh - ..... 169
Mèleze de la Ciine. Fiverch. Pseudo-Larix Kempferı. Golden or Chinese Larclı ..... 360
Mélize du Jaron. Prench. Larix Leptolepis. Slender-sealed Japan Larch ..... 173
Mélìze du Nepaul. French. Larix Griffithii vel Sikkimensis ..... 171
Me-Matsu (Female Pine). Jupan. Pinus densiflora. Dense- flowered Japan Pine ..... 23.1
Menzies'Spruce. Abies Mcnziesii - ..... 12
Mire-mionir. Japarn. Short-leaved, or small-coned Fir. Picea firma. Japan Silver Fir ..... 205
Miro or Mairo. N'ew Zealund. Podoearpus ferruginea. Rusty- coloured Podocarpus ..... 352
Modrozew, Polish. Larix Ledebourii. Altaian Larch ..... 173
Monir. Japan. Spruce or Silver Firs. Abies, Picea firma, ete. - ..... 1
Monkey Puzzle. Chili. Araucaria Imbricata. Chili Pine ..... 29
Monstrous Spruce. Abies Execlsa monstrosa ..... 10
Moreton Bay Pine. Araucaria Cunninghamii ..... 41
Morin. India. Picea Pindrow. Upright Indim Silver Fir ..... 222
Morinda (Nectar, or Honey of Flowers). Himulaya. Abies Smithiana. Indian Spruce Fir ..... 20
Moro. Japan. Juniperus Rigidn. Stiff-leaved Japan Juniper - ..... 138
Morisida. Indic. Picea Pindrow. Upright Indian Silyer Fir ..... NAG:
Moshevelsik. Jussian. Juniperus c.mmunis. Comunon Juniper ..... 1:1
Moustais Pine. Pinus Monticola. Mountain Pinc ..... 311
Mugho Pine. Pyrenecs. Pinus Mugho ..... 241
Muscadier. Fiench. Torreya or Californica. Califomian Nutme ge ..... 4111
Na or Nagi, Jelpan. Nagcia. Catkin-bearing Laurel ..... 18.5
Native Cypress. V'an Diemev's Land. Frencla Gunnii ..... 120
Nieoza. Ilimelufl. Pinus Gerardiana. C'apt. Gerard's Pine ..... 268
Nepsll Arbor Vitee Biota Orientalis gracilis ..... j2
Neraul-(iprease. Geriadr. C'upre us torulosa, Twisted o: Bhotan Cypres ..... 97
Newfoundlind Ied Pise. Abies rubra. Arctic Spruce Fir ..... 1s
New Hollisid DAsuara. Dammara rubusta ..... 11:3
Newr (Jusirer). Cituhn ie. Juniperus licligion, or Eiveela. P'encil or Inceuse Fir ..... 1.3
New Jersey Pine. Pinus hops ..... 20
New Zelland Sprlce. Dacrydiun Cupresamum. Cypres-luke Dacrydium -
Nirzu (Dwarf). Jayna. Tietinospora Ericoirtes. Heath-like lietinespora, and Thump is dolabrata nana. Dwarf hatchet-lared Arlir Vitaz ..... 207, 4ヶハ
Nire-Momi, or Mere-Momi (Ju/an.) Picla firma Japam Silver fir ..... 21.5
 Cedar
(i)
(i)
Norfolk Island Pise. Arau:ria Excelsa ..... 15
Norfulh-TanNe. Gemunh. Araucaria excelsat. Nosfolk Island Pine ..... (i)
Norti Americis lew. Taxus Canaden is ..... 393
Nomay Splect Fif. Abiey Exceloa 'ummon Jurway Spruce ..... is
Norway White Deal. Abies Excelsa ..... 7
Nut lene. Colijormi P. Pinus Fremontiana. Colonel Fremont's Nut Pine ..... $23 /$
Nut and Notmeg Yews. Torrega Calionnica, etc. ..... 410-1.3
Obispo. Calijornit. Pimis Muricata Bishop's Pine ..... $241 ;$
Ocotli ú De' Ocote. Mexrico. Pinus 'Tcocote. Candle Wood Pine. ..... $2 \varepsilon 7$
Onts: Chino (C'andle Wood). Vexico. L'inus Lemphylla. Smootli-leaved Mexican Pine ..... 305
Ocote Hembra (Female Pine), M/roco. Pinus findoniania. Cin. don's Mexican Pine ..... 3
Ocote-Mache (Male Pinc). Mexico. Pinus Grenvillix. Lady Grenville's Pine ..... 303
Oesterreichiscie Scirwarz-Kiefer. Gciman. Pinus Austricica. Austrian Pine ..... 239
Olanda-Mowi. Japern Cunninghami Sinensis. Chinese Cun- ninghamia ..... 77
Oldfield Pine. Virginia. Pinus Tæda. Torch or Loblolly Pine ..... 287
Olao. Spanish. Juniperus nana. Dwarf Juniper ..... 136
O-Matsu or Wo-Matsu (Male Pine). Japan. Pinus Mas- soniana. Masson's Japan Pine ..... 241
Oonum (Purple-coned Fir). Himalaya. Picea Webbinua. Webb's Indian Fir - ..... 227
Open-leaved Jointed Yew. Arthrotaxis laxifolia ..... 48
Oyamel. French. Pieca Religiosa. Saered Silver Fïr ..... 212
Oyamel. Mexico. Picea Religiusa. Sacred Silver Fir - ..... 212
Oyamel Weisstanae. German. Picea religiosa. Saered Silver Fir ..... 212
Oyster Bay Pine. Van Diemen's Land. Firchela Australis. Australian Frenela - ..... 117
Pallo Blanco. Speanish. Pinus Hartwegii. Hartweg's Pine ..... 304
Pala Pine. Pinus Australis. Southern or Swanp Pine ..... 261
Pama. Ifimalaya. Juniperus Squamata. Scaly-leaved Nepaul Juniper ..... 153
Pars. Columbia. Abies Douglasii. Douglas Fir- ..... 24
Parasol (or Umbrella) Pine. Sciadopitys verticillata ..... 376
Parpinja (creeping Juniper). Bhotan. Juniperus Squamata. Scaly-leaved Nepaul Juniper ..... 153
Pechbaum. German. Abies Exeelsa. Common Norway Spruce ..... 6
Peiluen. Chiti. Araucaria Tmbricata. Monkey Puzzle - ..... 41
Peking Arbor Vite. Biota Orientalis Pekinensis ..... 54
Pencil Cedar. Juniperus Bermudiana. Bermuda or Pencil Cedar ..... 140
Peadulous, or Inverted-brancied Spruce. Abies Excelsa in- verta. Inverted-branched Common Spruce ..... 9
Perusse (Gall-leaved). Cancelca. Pinus rigida, Stiff-leaved Pinc ..... 283
l'esse. French. Abies, or Picea, Excelsa. Common Norway Spruce ..... 6
Pesse Blanche. I'rench. Abics alba. White Spruce Fir ..... 3
Pesse Mariane. French. Abics nigra. Black Spruce Fir ..... 13
Peukas or Peuchos. Greece. Pinus Halepensis. Aleppo or Jerusalem Pinc ..... 237
Pezzo. Italian. Abies Excelsa. Common Norway Spruce ..... 6
Phomician Juatper. Juniperus Planicea ..... $16 . t$
Pian－fa．Chinese．Biota Orientalis．Chinesc Arhor Vitæ pacePicita．Riussiun．Picea Pichta．The Pitch or Siberian SilverFir221
Ptisiy Sprecer．Abies cxcela pygmæa．Diwarf Spruce ..... 7
Piguy Japris Cypress．Japan．Retinospora obtusa pygima ..... 369
Piva．Aexico．Pinus Loudoniana．Loudon＇s Pine ..... 311
Piv a Crociuts．French．Pinus Mugho．Mugbo Pinc． ..... 241
Pin a Trochets．Prench．Pinus Pinaster minor．Cortean Pine ..... 251
P1s de Corte．Corsica．Pinus Pinaster minor．Cortean Pine． ..... 251
Pin D＇Ecosse．Firench．Piulus Sylvestris．Scotch Fir ..... $25 \%$
Pis̃ d＇Italle．French．P＇inus Pinea．Italian Stone Pine ..... 252
Pin de Ladendor．French．Pinus Banksiana．Sir Juseph Banks＇s Pine ..... 2.30
Pinde Mars．French．Pinus Pinaster minor．Cortean Pine ..... 251
Pinde Rita，ou de luusite．French．Picea Pichta．Pitch Pine ..... 221
Pin de liussie．Fremih．Pinus Sylvestris horizontalis．Highland Pine． ..... 2.35
Pin des Abbruzzes．Prench．Finus Drutia．Calabrian Cluster Pine ..... 232
Pis Doux．French．Pinus mitis．Soft－leaved or Vellow Pino－ ..... 243
Pis Fatd Crmbro，Frenk．Pinua Cembra．Swiss Stone line ..... 295
Pw Mamitme．French．Pinus ऐinaster．Star or Cluster Pine－ ..... 249
Pin Nazaron．Pyrenes．Pinus P＇remaica．Pyrencan Pine ..... 256
lin Pinsot．French．Pinm Pins－ter minor．Cortean Pine ..... 251
PiN SaUvace．French．Pimus Sytvestris．scotch Fir ..... 2.57
P1sdrow（Wecping）．Hinelayc．Prea P＇indrow．Upright Jnhan Silver Fir
223
223
Pバメ，the Truc，Pinacex ..... 228－326
Pisino－molar．Porturuese．Pinus Pinca．Italian Stone Pine－ 252
Penileiro mmsico．Portuguesc．Arauearia Brasilicnsis．BrazilAraucaria
37
I＇no．C＇hili．Saxe－Gothea conspicua．Ficmarkable Saxe－Gothæa． Prince Albert＇s Iuw
Pivo．Island of C＇hiloc．Podocarpus Nubigæna．Cluud－boris Podocarpus ..... 3.3 ..... 3.3
Pino Blanco（White Pine）．Merico．Pinus Devoniana．Duke of Devonshire＇s I＇ine ..... 344 ..... 344
208
208
Pivo dl＇Ocote．Afecicu．l＇inus Tcocote．Caudle－wood Pine ..... 283
P＇ao Rma（lioyal Pine）．Ahwitio．P＇inus Buonapartea．Buonaparte lino
Pinoses．Nexico．Pinus Llavcana．Llave＇s Pine ..... － 295,203
Pitcil Pise．America．Pinus Australis，Southern or Swamp Pine， and Pinus rigida．Stiff－leaved Pine － 261,281
Pitcii or Siberian Silver Fir. Picea pichta ..... pagr.
Pityusa. Gircece. Pinus Halepensis Pityusa ..... 237
Pluar Fir. Podocarpus Andina ..... 351
Plum-fruited Juniper. Asia Mfinor. Juniperus drupacea ..... 133
Pond or Fox-tall Pine. American. Pinus Scrotina ..... 285
Ponum. India. Pinus Webbiana, Webb's Indian Fir ..... 220
Portugulse Cypress. Cupressus Lusitanica. Cedar of Goa ..... 80
Prickly Cledar. Apemines. Juniperus Oxyccdrus ..... 137
Prickly Firr, IFimalayd. Abies Smithiana. Indian Spruce Fir ..... 20
Prince Aldert's Yew. Patagonia. Saxc-Gothæa conspicua ..... 372
Pudina, IImalayc. Junipcrus Squamata. Scaly-leaved Ne- paul Juniper ..... 152
Pumaroa. Bhotar. Juniperus densa. Bushy Indian Juniper ..... 142
Pumpeiv Pine. Canada. Pinus Strobus. Weymouth Pinc ..... 323
Pung-cia ('Tea Trce). N. India. Taxus Wallichiana. Wallich's Yew ..... 397
Quachow (deciduous). China. Salisburia adiantifolia. Maiden- lair 'Trec ..... 37.
Qual. Japar. Juniperus Chinensis. Chinese Juniper ..... 158
Quesa. Laptand. Abics excelsa. Common Norway Spruce ..... 6
Quirlbletterige Schirm-ficite. Géeman. Sciadopitys verti- cillata. Whorl-leaved Sciadopitys or Parasol Fir - ..... 376
Tiedika. Lapland. Juniperns communis. Common Juniper ..... 131
R.esula. Indic. Pinus excelsa. Lofty Bhotan Pine ..... 299
R.ai, healla, etc. (Prickly Fir). Ilimalaya. Abics Smithiana. Indian or Hinalayan Spruce Fir ..... 20
Raballa, or Raisulla (King Pinc). Nepaul. Picca Webbiana, Webb's Indian Fir, and Cupressus Tomlosa. Twisted or Bhotan Cypress ..... - $97,2: 27$
Rakan-hak. China, Japan. Thuionsis dolabrata. Hatchet- leaved Arbor Vitæ - ..... 398
Ramilia or Bramini. Indid. Taxus baccata. Common Yew ..... 388
Rauhzapfige Taunc. G'emman. Picea Amabilis. Lovely Silver Fir ..... 213
Rax-jo-sso (Common Decidnons Fir). Japan. Larix Leptolepis. Slender-scaled Japan Larch - ..... 174
Riyad. Hinalaya. Picea Pindrow. Upright Indian Silver Fir ..... 223
Red American Larch. Larix Microcripr ..... 175
Red Cedar. America. Juniperus Virginiana. Virginian Cedar- ..... 15.1
Red Pive. America. Pinus Australis. Southern or Swanip Pine ..... 280
PAGF
Ren or Arctic Spruce Fir. Nova Scotia. Abies Rubra- ..... 17
Red Wood Tree, or Bastard Cedar. Califormia. Sequoia sem- pervirens ..... 350
Ree or Riree. Himalaya. Pimis Gerardiana. Gerard's Pine - ..... 263
Remr. Indie. Dacrydium Cupressinum. (ypress-like Dacry- dium ..... 104
Resivous or Red American Plae. Worth America. Pinuly Ricsinosa ..... 250
Retinospore. Fiench. Retinoypora Pisifera. Pea-fruited Re- tinospora. ..... 309
Ritsen-kieffi. German. Pinus Lambertiana. Lambert's l'ine ..... 307
Riesen-tinse. German. Wellingtonia gigantea - ..... 415
Riga Pine. liuspiz. Pinus Sylvestris. Scotel Fir ..... 257
Hituliser. Hinnterya. Taxus Waltichiama. Wallicth's l'ew ..... 397
Rimu. N'en Zealand. Dacrydium laxifolinm. Loose-learel Dacrydium ..... 11.
Rivm. N'en Zentenul. Dacrydium ('uy ressinum. Cypress-l2hc Dacrjdium ..... 11 ;
Inotil-eide. (ficiman. Taxue beccata. Common Yew ..... 2~s
hotime liefer. German. Pinus Sylveatris rubra. Highland P'illo - ..... 2.5
Huth-maine. Germuen. Nbie exe Ia Common Norway Spruce ..... 0
Sousdocosild Chanese Pinb. ('hiau. Pinus Pinca C'retica-
lino, Rol. liou-ek, or liow (Wieping' Fir). Himalry !. Abies simithiana. Tndians spruce Fir ..... 19
human or Afchasigel Larcif. Larix Ledebourii. Altaian Larch ..... 172
Sibina. Meried Juniperus Mexicaun. Mlexican Eandaran Juniper ..... 161
Subivo. Me.ico. Taxodium distirloum Mestcanum. Montu zuma ('ypress
$3 \times 1$
$3 \times 1$
Sicin-momi, or sutha Momi. Irpich. White or Silver Fir. Picea firmit -
S.aI. Whoter, Larix Grifitithii. Sikkim Larch ..... $20 j$ ..... $20 j$
Saksts. Mantchooriu. Cupre ns Funebris. Weening or Fiuncral Cypres
Suller. Indie. Picea Wehbiana. Webl's Indian Fir ..... 2อ!
Sin. Chinese. ('ryptomeria Juphnica. Japan C'edar ..... 71
Gind Fhemila. Neic Hollund. Frenela Arunosa - ..... 117
Sindms. Germar. Pinus Pumilio. Mountain Pine ..... -j?
Siv-Stras. Chinese. Cryptomeria Japonica. Japan Cedar .....  5
Sas-She. Chima. Cunniughania Sinensis. Chinese ('maning-hamia
rans
Sapin. The French name for Fir trees, Abies Canadensis, etc. ..... 22
Sapin Commun. Frenell. Picea Pectinata. Common Silver Fir- ..... 20,9
Sapin Commune. French. Juniperus Sabina. Common Savin ..... 150
Sapin d'Espagere. Fiench. Pieca Pinsapo. Pinsapo Fir ..... $22: 1$
Sapin Gracieux. French. Picea amabilis. Lovely Silver Fii - ..... 213
Sapin Mineur. Fibench. Picea Balsamea. Baln of Gilcad Fii - ..... 2011
Sapin Noble. French. Picea nobilis. Noble Silver Fir - ..... 207
Sapin Sacre or Oyanel. Fiench. Picea Religiosa. Sacred Silver Fir ..... 212
Sapindus-Fichte. Germen. Abics Oricntalis. Eastern Spruce- ..... 15
S.apinette Blanche. French. Abies alba. White Spruce Fii - ..... :3
Sarinette Nohe. Fiench. Abics nigra. Black Spruce Fir ..... 13
Safinette Noire. F'rench. Abies nigra - ..... 24
Sap-Pine. America. Pinus rigida. Stifi-leaved Piue ..... 283
Sas-coo-pas (Big Tree or Great Fir). Americu. Abies Douglasii. Douglas Fir - ..... 24
Savin Juxiper. Lozeer dlps. Juniperus Sabina. Common Savin ..... 150
Sawara. Japar. Retinospora Pisifcra. Pea-fruited Retinos- pora - ..... 370
Schirmifehre. German. Sciadopitys verticillata. Parasol Pine ..... 376
Scmucktanne. German. Araucaria ..... 35
Schwarz-feime. German. Piens Laricio. Corsican Pine ..... 239
Schwariz-tanne. German. Abics Excelsa. Common Norway Spruce ..... 6
Scinwarz-fichte. Geimenn. Abies nigra. Black Spruce Fïr ..... 13
Schwarz-kiefer. German. Pinus Laricio. Corsican Pine ..... 239
Scotch 「ir or Pine. Europe. Pinus Sylvestris - ..... 257
Scrub Pine. N. America. Pinus Binlksiana. Sir Joseph Lanks's Pinc. ..... 230
Serembaus or Sevexstrauch. Junipeius Salihil. Common Sitrin ..... 150
Seeliefer. Germen. Pinus maritima. Corsican Pine - ..... $21: 3$
Sent-sjo. Japan. Common Tree. Pinus Sinensis and Pinus Densiflora. Chincsc Pinc. Dense-flowercd Japan Pine - ..... 23:3
Semadooyg. Dhotur. Abjes Irtuoniana. Indian Homlock Spruce ..... 21
Sleosa-Mats (Deciduous Fir). Japan. Pseudo-Larix hixmpferi. Golden or Chincse Larch ..... $8 \because 1$
Serente. French. Abies Excelsa. Common Norway Spruce ..... 6
She Maki. Jotipar. Common Chinese Maki. Podocarpus Chi-nousis. Chinese Pudocarpus330
Shirgoo or Shirkio (Ineense). Bhitan. Juniperus Religiosa. Pencil or Ineense Juniper
fag:
Shookpa, Siroor, Sitoorps (Incensc). Bhotan. Juniperus Reli- giosa. Peneil or Incense Juniper - ..... 14.0
Sutsfutulite-vut (Tree of Life). Simld. Cupressus Torulosa. Twisted or Bhotan Cypress ..... 93
Shungtee (Sweet Pine-nut). Thibet. Pinus (ierardiana. Ger- rard's Pine ..... 260
Siberias Abbor Vhes Thuja Tatariea. Tartarian Arbor Vite. ..... 40.3
Siberdan Savin. Juniperus Pseudo-Sabina ..... 140
Stberlan stone Pine. Pintis C'mbrasibirica ..... 20
Simimectie l'ecutnast: German. Picen lichta. Siberian Silver Tir ..... 2.1
Siema. Alhyseinid. Podocarpus clongatia Elongated Podo- carpus ..... 330
Shlber kilfer. (itinuten. Pinue Sylventris argentea. Silvery Scutch Fir ..... $\therefore 61$
Siluer-tinne Gicrman. Picea Pectinata Common Silver Fir ..... 2013
Silloo-Hiteriner (Fragrant Fir) Ar/mal. Abies Brimoniana. fudian Hemlock Sprnce ..... 22
silver Chiar. Cedrus Libani glauca ..... GG
Silver Fita: Pieea in gencral ..... $196-2=3$
Silver Fire (the American). C'nuntu. Dicen Balsame?. Ralm of (iileal Fir ..... 201
siliter Fur (tho ('ommon). - It/as. I'cear Peetinata ..... 20.3
silver Fir (the Indiau). Sikkim. Picea Webbiana. Webb's Indian Fir ..... 227
Sis. Chincse. Podocarlus Chinensis. (Chinese Pudocarlus ..... 330
Sinobu-IIIB. (treo of life-like shirnb). Ituran. Retinozpora Squarrooa. Siquarrose leaved lietinospora ..... 3.2
Stw-Kosa-Mtikı (Wild Maki). Chisue. Pedoearpus Chinensis. Clinicte Podocarpus ..... 330
Sis-Maki Common Maki). Chi ". Pudocarpus Macroplylla. Lung-teaved Podocarpus ..... 311
suro-rumi (White-wooded Fir), Je, etn. Abies polita. Tiger's Tril Ajpruce ..... 17
minega-matwe (Variegated Pinc). Jiepan. Pinus Massoniana. Masson's Japan Pine ..... $-12$
 Titx. ..... 55
Sitare-hinoki. Japan. Biota pendula. Weeping Arbor Vitæ- fage
Sjo-mats (Common Pine). Cluina. Pinus Massoniana. Mas- son's Japan Pine ..... 242
Suura-Momr (White or Silver Fir). Jafrer. Picea firma. Japan Silver Fir ..... 204
Selnez. liussian. Pimus Cembra. Swiss Stone Pine ..... 20.3
Slfndfr Spruce. Abies Excolsa tenuifolia ..... 11
Sovoctbar-Sukkar (Sweet Pine Nut). Ilimataya. Pinus Gerard- ima. Gerard's Pine ..... 263
Soyorn-Mats (Slender or Drooping Jmiper). Jufun. Juniperus Rigida, Stiff-leared Japan Juniper ..... 138
Suoraty-vye (name of a Hindoo Divine). Bhotem. Cupressus torulosa. Twisted or Bhotan Cypress ..... 99
Sorlose. Bengal. Nageia latifolia. Broad-leared Nagi ..... 189
Sosno, or Sosmo. lussian. Pinus Sylvestris. Scoteh liir ..... 257
Spanische Weisstanae. Germur. Piccal Pinsapo. linsapo Vir ..... 22.4
Spasish Jumiper. Jmiperus Thurifera ..... 153
Spempiefle, German. Pinus Serotina. Fox-tail or Pond l'ine- ..... 285
Spfre. German. P'inns Pumilio. Nountain Pine ..... 253
Spirtenholz. Suiss. Pinus uncinata. Scotch Fir ..... 257
Spruce (the Common). Ninizeay, Sueclen, dee. Abies excelsa, etc. ..... 6
Spruce Fir (the Black American). N. America. Abies nigra ..... 13
Spruce Fir (the White American). C'unculd. Abies alba - ..... :
Spuried Frenela. Frenela calearata ..... 117
Star or Cluster Pine. Apennines. Pinus Pinaster ..... 249
Stenfirfer. Geiman. Pinus Pinca. Italian Stone Pine ..... 252
Sternfarine, German. Pinus Pinaster. Star or Cluster Pine - ..... 249
Striktif Cedar. America. Turreya taxifolia. Ten-leaved 'Torreya ..... 413
Stose Pine. Italy and South of Firanee. Pinus Pinca ..... 252
Stramlexscuuppige Kiefer. Geimaiz. Pinus ridiata Radiated Cone Pine ..... 282
Strsindkiefer. Círman. Pinus Pinaster. Star or Cluster Pine ..... 249
Suga, or Sisuga Mats (Evergreen Fir). Japan. Cryptomeria Japonica. Japan Cedar ..... 7.1
Sugar Prie. California. Pinus Lambertinna. Lambert's Pine ..... 307
Sulla (Fragrance-sjorending). Nepaul. Pinus longifolia. Long- leaved Pine ..... $2 \pi$
Suapf-ferires, German. Pinus Mugho rostrata. Peaked Mugho Pine - ..... 245
SUNG-cif. Himalayce. Taxus-TVallichiana. Wrallich's Iow ..... 397
 fitel
variogata．Variegated（＇hinese Arhor Vita²
51
51
 ..... 71
SWanl l＇ive．Fimimic．I＇inus Australis
2611
2611
SW：N RuER（＇rpRLSE Actinostrobus Pymundatis ..... 3.
suecira ..... 132
Sines STune Pial：A／pax．Pinus Cembma
Sines STune Pial：A／pax．Pinus Cembma ..... 29.1
T．untis．Morin．Pinus．Ayacahute．Ayacaluite Pine ..... $2!13$
 can Larch
17
17
T＇ivekii or Tawar．Nen Zerlamel．Ihylluchadus Trichomannides． Maden－hair－like Phyllucladus .....
19．5 .....
19．5
Tinver Cierman．Common name fur Abies or Firm
1－3：
1－3：
Tu－d or Tasshisg（Nenlle Tree．Ifimelume．Jinus longifolia． L．ong－leared Pine．
Tirlt（White Wum？．An tiout Jimus ponderosa．Heary－
Wuoded lite－ ..... 21.
wooded l＇itue－
Thifytisi Pane．lualy．Pinta Pinen fragilic．Thin－shalled Stone Pinte ..... $\therefore-1$ ..... $25 \%$

$15:$
$15:$
Than．Italien．Tixumb bireata．（immon Vew．
34
34
 Pine
 ..... $\because 17$－alisburia．I＇ulwarnu＊，Dacrydium，Naxu－Cothea，Phyt－Lucladus：
firmpe Bamboo－liker）（＇le，ter．Nageia Japonica．Jaf！an
Autkacmsis，and liona（ilieil．Sntkit－mund fypress．（＇ilician Silver Fir－－！．．．1.1
4．5 2211

$20 \cdot 1$
$20 \cdot 1$
Tesse．Cormen．livea Pectimata．Commonsiluer lin
$20: 9$
$20: 9$
Trexo（lew），Simmete．Tasushaceata．（ommon I＇cw
？
？

こった
こった
 sealy－leaved Nepranl Juniper
$13: 3$
$13: 3$
 ..... $1: 27$
Thinema (Yew). İfyenl. Abies Prmoniana. Thelian Hembeck Spruce
Thingoort-Sulla (Fragrant J'ew). Abies Brunoniana. IndianHemlock Spruee22
Thooni or Thooner-Birmee. Himalayce. Taxus Wallichiana. Wallieh's Yew ..... 397
Thooner (Yew). IImalaya. Picea Pindrow. I'pright Indian Silver Fir ..... 224
Thread-leayen Pine. Pinus filifolia. Thread-leaved Pine ..... 301
Thuyorsis men Doloire. Freuch. Thniopsis dolobrata. Hatehet- leaved Arbor Vite ..... 398
Theer's Thil Sprecee. Abies Polita ..... $11 ;$
Tinder Firs, i.e. the usual Pine Trees of commerce. Abies excelsal Common Norway Sprice, the Lareh, etc. ..... 165
Tregsin. Sikhim. Taxus Walliehima. Wallich's Yew ..... $39 \%$
Triner. France. Pinus Cembra. Siwiss Stone Pine ..... $2!9 . \pi$
Tos-Ton. New Zealand. Phyllocladus Trichomanoides. Maiden- hair-like Phyllocladus ..... 195
Toga-matsu. Japren. Abies Tsuga. Jipan Hemloek Spruee ..... 32
To-Mom. Japan. Pieca Firma. Japan Silver Fir ..... $\because 115$
Tom Thumb. N. America or Jupan. Retinospora Elwangeriana - ..... $3(6$
Toraxo-wo-momi (Tiger's Tail Fir). China. Abies Polita ..... 17
Torcir or Pitcir Pise. America. Pinus liigida. Stiff-leaved Pine ..... 283
Toss. IFimalaya. Pieca Webbiana. Webb's Indian Fir - ..... 228
Totara. New Zechencl. Podoearpus Totara. Totaral Pine ..... 3.511
Trauer-Cypresse. Gírman. C'upressus Funebris. Weeping or Funcral Cypress ..... $\therefore 2$
Tsabo-hiba. Japicen. Biota Orientalis. (hinese Arbor Titar ..... : 11
Tsain-sung (Common Drooping). China. Cupressus, Fimehris. Weeping or Funeral Cypress ..... $8: 3$
'Iscimr, Tscuirl, or Cheer. Himertuya. Pinus Longifolia. Long- leaved Pine ..... -9
Tsugia (Yew-leaved). Jépun. Abies Tauga, Japan Hemloek Spruce ..... 32
Tuc-Tue (Big Tree). Columbice. Picea Nobilis, Noble Silver Fir ..... (1)
Tzırbolya. IInuguriun. Pinus Cembra. Swiss Stone Pine ..... 495
Ucuroo (Eagles' Bush). Nepraul. Juniperus hecurva. Drooping Indi:un Juniper ..... 117
Umbreila or Parasol Pise. Sciadopitys Verticillata. Whorl- leaved Sciadopitys . ..... 376
INDEN OF POPULAR NAMES. ..... $18: 9$
 Silver Fir ..... $211 \%$
 Juniper ..... 141
Vherinios Jexneer, or Ricd Cedar Juniperus Virginiana ..... 1.54
Wachholder, Gínmun. Junperns communis. Common Juniper ..... 131
Varziee Kinfers. ('́erman. Pinus protuberans. Protuberant- scaled Mrxican Pine ..... 319
W.ater Cedir or Swamp Cipres. Chamecyparis ..... $-1$
II iter Pinen Chinese. Glyptostrobus Heterophyllus ..... 1211
IV:-WHEMEM (I'ighting Wood), I. Amerime. Toxus hrevifolia. Wentern or Californian Yuw
 spited [’odocarpus ..... $\therefore 1.5$
 ..... H:j.i)
Wiempin Cropros. Cupressua Fumelais. Weepines or Funeral C!pmess ..... \&2
Wreeprn, Fise. /limalngu. L'inus uxcelsa. Lofty Blootan Pine ..... $3(\mathrm{~m}$
Wispipia Larecif. Lariy Europara pendula. Foondsall's Weeping Larch ..... 1711
 ( ${ }^{\text {ommon }}$ spruce ..... :
Wh:mint: low. Taxus Baceata pendula or hovastoni. Duvals. tons lem ..... :3?
 lillow linc - ..... $\because 13$
 Pine -
$24 ;$
$24 ;$
Wersi-tivatin Cicmun. lieea l'ectinato. ('ommon Silver Fir - ..... 21.1
 ..... 131
 ..... 3
 ..... il
Whate C'sratas. Ameion. Taxoliun distiohimu. Decidhous ('ypress
$3-3$
$3-3$
Whimt. De.th Jormaty. Abies excelsi. ('unmon Norway Spluce ..... 7

17
17
Winte Pive the C'anadian'. J'inus Strobus. Weymonth Pine - ..... $3 \div 2$
Wimpe Sirutee. Cémelu. Ibios alba ..... :
 dium-like Podocarpurs
3.
3.
Willuw-leayed I'udociarés. F'udocarpus C'hiliaa ..... 329
Fu． 5
Fu． 5
Woon Pisl：．Simlu．Abies Smithiana．Indian Sproce Fir，and Pinus Strobus，Weymouth Pinc 20 and $: 2.2$
 Fir ..... 213
Wo－mitsu（Male Pine）．＇Iupur．Pinns Massoniana．Masson＇s Japan Pine ..... 2.42
Woonư（Purple Cone）．Bhoten．Jiceal Pindrow．Tjpright Indian Silver Fir ..... 22.4
Wumi－matsu（Sea Const Pine）．Sapuel．Pinus Koraiensis．（ ${ }^{\text {Wo－}}$ rean Pine ..... ：36
Yacea．Antilles．Podocarpus Coriacea．Leathery－leaved Podo－ carpus ..... 332
Yanr．Ciashmere．Pinus exeelsa．Lofty Bhotan Pinc ..... 299
Yellow－berried Tew．Taxis baceata fruetu－luten ..... 301
Yflow Dr．al．l＇imes Sylvestris．Seoteh Fir ..... 257
Iralon P＇a゙e．Americr．Pinus mitis．The Soft－Leaved Pine．Also Pinus Australis．Southern or Swamp Pine，andPimus ponderosi．I Cavy－wonded Pine－－243，260， 281
Yews，Taxacere ..... 38fi－398
Yew，que Common．Taxus baceata ..... －：284
Tew，the Marringtus．（＇ephalotaxus pedunenlata ..... （i！）
ZamD，Zasid，or Zendr．Ibyssimin．Jumperns Proceril．Ahyss sinian Juniper ..... 16.2
Zas゙a－rifa（blood－healing）．Himalugu．Taxus Wallichiama．Wal－ liclis Yew ..... $39 \%$
Z．aprex－TRE：ER：Ciplman．Conifere．（＇onifers
K．ERbel．C＇erincon．Pimus（＇embrit．Swiss Stone Pine ..... 295
Zslete．Germetr．Pinns Pumilio．Mometain Pine ..... 253
Zevenboos．Juniperus communis．Common Jumiper ..... 131
Zafaretss，Cirman．Pinus（＂embra．Swiss Sione Pine ..... 295
Zinuru．Povtututer．Jmiperns communis．（＇ommon Juniper＇ ..... $1: 31$
Yirmblnuss－liwerer．Girmon．Pinus Cembra．Swi－s Stone Pine ..... 29
 ..... 76

## CATALOGUE

OF

## CONIIERS, AMERICAN PLANTS, ORVAmental trees, etc,

CULLIVATED FOR SALE BY

## ANTHONY WATERER,

KNAPHILL NURSERY, WOK゙ING, SURREI.

## AMERICAN PLANTS.

The KNaphill Nursery is the most extensive, as it is the oldest, establishment in England in which the cultivation of American Plants has been made a speciality. At the present moment its extent exceeds 200 acres, of which more than 60 acres are allotted to the cultivation of American Plants alone. The beds and borders devoted to this class of plants extend over miles in length, and contain the largest quantity of the finest plants to be met with in this country, or in Europe. $A$ visit, which is earnestly solicited, will prove this to be no mere assertion.

In a general way, all American Plants may be said to delight in, and to require, what is called peat soil, and it was at one time believed that they would not thrive in any other. Experience, however, proves the contrary, and it is now found that Rhododendrons, the most important of them all, as well as other of the more vigoroushabited plants, thrive in almost any soil that doe not contain lime. In many sandy loams they grow with as much vigour and luxuriance as they do in peat, and almost any loamy soil, free from lime or chalk, may be rendered suitable for them by a liberal admixture of leaf-mould, or any fibrous material, such as the parings of pasture land. When the soil is poor, a moderate dressing of farm-yard manure may be occasionally applied with advantage. Cow-dung, in a thoroughly decayed state, forms one of the best manures for these plants.

## American Plants.

## RHODODENDRONS.

These fine evergreens, with their magnificent flowers, are unequalled for the decoration of pleasure grounds. The stock in this nursery is of the finest quality, and almost of boundless extent. Nearly the whole of the large Standard Rhododendrons planted in Rotten Row, Hyde Park, were supplied from here ; and the Exhibitions of Rhododendrons held annually in the Royal Horticultural Garden, South Kensington, consist entirely of specimen plants selected from the Knaphill collection.

## HARDY SCARLET, WHITE, AND OTHER RHODODENDRONS.

We supply selections of Rhododendrons at from $£ 5$ to $£$ io per 100. The plants are healthy and bushy, and such as may be planted out in any situation at once. They comprise varieties of nearly all shades of colour. Many of them are from layers, and we believe that they are altogether the best plants ever offered by any nurseryman. We shall gladly send samples on application, that being the only possible way of giving a correct idea of the value of the plants, a mere statement of height being, in such cases, utterly delusive.

Purchasers of Rhododendrons who may be unacquainted with the different kinds by name, and who are willing to leave the selection to us, may depend on receiving those sorts only which after many years' observation we have found to be the most showy, and certain to thrive under ordinary treatment. A descriptive list of the kinds will be forwarded on application.

## RHODODENDRNN PONTICUM.

The cheapest of all Rhododendrons, being raised from seed in large quantitics. It is less particular as to soil than most other sorts, and is extensively planted in game preserves, being never eaten by hares or rabbits, however numerous they may be. We are prepared to supply it at the following rates :-
Ponticum (Common), nice, well-rooted, and stout plants i5s. per 100.

- ditto, about Ift. - - - - 215 . ",
- ditto, 12 to 18 in . - - - 30s. and 425 . "
- larger plants, 65 ., 95 ., 125 ., and 185 . per dozen.


## STANDARD RHODODENDRONS.

Of these noble plants we possess much the finest specimens anywhere to be found, and in much larger numbers than in any other nursery. Many of them are from twenty to forty years of age, and have compact well-balanced heads measuring from 15 feet to 30 feet in circumference.

[^9]
## American Plants.

## HARDY AZALEAS.

Of all hardy flowering shrubs, none perhaps afford such a variety in colour as Azaleas, for almost every shade of pink, white, yellow, orange, and scarlet is to be found amongst them; and as they generally flower in great profusion, and are, many of them, deliciously scented, they deserve to be universally planted. They are, moreover, perfectly hardy; and will flourish wherever Rhododendrons are grown. 12S. to 305 . per dozen.

All other generally termed American Plants, such as Kalmeas, Andromedas, Heaths, are largely grown. Detailed and priced Catalogues on application.

## CONIFERS AND TAXADS.

The stock of Conifers at Knaphill is as fine as anything of its kind in this country. All the plants are growing in the open ground, and are thoroushly healthy and well-rooted, not having been injuriously affected by pot-culture. They are handsome and symmetrical specimens; and all are removable with safety. Purchasers of fine specimens would do well to pay us a visit.
逐 We reserie the right of applying Special Prices to Special Plants.

AbiES.-Spruce Fir.
Albertiana (Mertensiana), $2 \frac{1}{8}$ to 3 ft . per cloz. $18 \quad 0$ -8 to 12 ft . per doz.

$$
42 \mathrm{~s} \text {. to } 8_{4}
$$

A tree with something the aspect of the Hemlock Spruce, but more gracefully pendulous.

canadensis (Hemlock Spruce), 3, 4, 5, to 7 ft . each is. 6 d . to Douglasil, it to | $\frac{1}{2} \frac{1}{2} \mathrm{ft}$. |
| :--- | per $100 \quad 50 \quad 0$ $-2,3, \&=4 \mathrm{ft}$. per doz. ISs. to $30 \quad 0$ One of the noblest and most beautiful of the Firs.



$$
1-2
$$

## Comifers and Taxads.

ABIES-continued.
Hookeriana, $\frac{1}{3}$ to 2 ft . - - - each 26

- 2 to $2 \frac{1}{3} \mathrm{ft}$. per doz. 30s. to 420
-3 to $3 \frac{1}{2} \mathrm{ft}$. each 5 s. to 76
Menziesil, 2,3 to 4 ft .
per doz. 125 . to 300
NIGRA, 3 to 6 ft .
per doz. I2s. to $4^{2} 0$
orientalis, small bedded - per 100200 ——about $\frac{1}{2} \mathrm{ft}$.
per doz. 18 o
- 3 to 4 ft . per doz.

425. to 600

- 5 to 6 ft . - each 76
-7 to 8 ft . each ros. 6d. and upwards.
ORIENTALIS, 10, 12, to
14 ft . high, 18 to
24 ft . in circumference, magnificent plants, 215 . each and upwards.

A most clegant tree, far too little planted.
ARAUCARIA.
mibricata (Chili Pine), 3 ft . - each 5 s . to
$-4,5$, to 6 ft ., each 10s. 6d., 21s., and upwards.

Some very fine plants up to 10 ft . high.
ARBOR VITE. Sic THuja ( $p$. ro).
BIOTA. Sec Thuja (p, 10).
CEDAR. Sie Cedrus. (p.4).

CEDAR, JAPAN. Sie Cryptomeria (p.5).
s. $d$.

CEDAR, WHITE. Sce
Chamecyparis ( $p .4$ ).
CEDRUS.-Cedar.
atlantica (Africana, argentea), 2 ft .
per doz. I8 o

- 3 ft . - per do\%. 30 o
- 8 to 10 ft . each 7s. 6d. to $10 \quad 6$
The African Cedar is of rapid growth, with a remarkably silvery aspect.
Deodara.
- 6 to 9 in. per 10030 o
- I to $1 \frac{1}{2} \mathrm{ft}$. per 100

50s. to $100 \quad 0$

- $1 \frac{1}{2}$ to 2 ft . per doz. 18 o
- $2 \frac{1}{3}$ to 3 ft . $\quad, \quad 300$
- $3 \frac{1}{2}$ to 4 ft . $\quad, \quad 420$

Libani (Cedar of Lebanon), $2 \frac{1}{2}$ to 3 ft .
per doz. 305 to 420

- larger, up to 8 ft .
per doz. Gos. to 1200
CEPHALOTAXUS.
Fortunei, male and female, nice plants per doz. 3 os. to 420
Evergreen trees inhabiting China and Japan, wonderfully hardy and free-growing, and deserving of universal cultivation.
CHAM ECYPARIS.White Cedar.
SPHeroidea per doz. 18 o
- variegata per doz.

I8s. to $30 \quad 0$

-     - fine specimens,

6 to 8 ft . high, and Io ft . round, 7 s .6 d .

## Conijers and Taxads.

CHAMACYPARIS-iontimued.
to ros. 6d. each, and upwards.

- AURE.1, new - each

CRYPTOMFRIA.-IApan Cedar.
JAPONICA each is. Gxl.
to 36
each 2 s. Gol. to
This variety, also called itridis, is of a bright green colour. blegans, 2,3 , and 4 ft . - each is. 61 . to

A very elegant plant, quite distinct in appearance from C. japonica, its foliage and young growth changing to a brownish-purple in winter, butbecoming green again in summer. It is quite hardy.
CUPRESSUS.-Cypress.
Lawsuniana, 1 to $1 \frac{1}{2}$
ft. - - per 100
-4 to 5 ft . per doz.
$50 \quad 0$

- 5 to 6 ft .
- ARGENTEA, $2 \frac{1}{2}$ to 3
ft. - - - each
-- larger, up to 5 ft .

$$
55 \text { to } 106
$$

This very distinct and beautiful variety, which is remarkable not only for the silvery glaucous hue of its foliage but also for its graceful habit, has been awarded 'Hhree First Class Certifi-

CUPRESSUS-continuci. s. d. cates; viz., at the Royal Horticultural Garden, at the Royal Hotanic Garden, and at the Crystal Palace.
R.AWGONIANA ERECTA VIRIDIS, $1 \frac{1}{3} \mathrm{ft}$., good plants - per doz. is o

- 2 ft., good plants per doz. 300
$-{ }_{3} \mathrm{ft}$., good plants
each 50
-     - some splendid plants, 4,5 , and 6 ft . high, ros. 6 d . to 21 s . each, and upwards.

This Cypress, raised here, is, there is no doubt, one uF THE FINEST HARDY tVERGREENS IN EXISTLNCE. It every year increases in beauty, and we do not believe there is an evergreen which is so universally and deservedly admired. It is purchased, without exception, by every one who sees it growing in our nursery. We quote the following description from the Gardener's Chromicle: " It is one of the finest-ay, one of the very finesthardy coniferous evergreens which has been introduced to our gardens. Its narrow, erect, almost

## Conifers and Taxads.

CUPRESSUS-continued. columnar mode of growth, is quite unapproached for symmetry and beauty by any other plant we know, while the slender ramifications of its close-set compact branches and branchlets give it a degree of refinement which is not seen in any other variety. This Knaphill Cypress, though dense as an Irish Yew, is, moreover, green to the very stem. We have ourselves watched this plant for several seasons, and can bear testimony to the fact, that it is utterly unaffected both as to vitality and hue by the severest frosts." It has been decorated with the Royal Horticultural Society's First Class Certificate.

- gracilis, about 3 ft . - - each 26
-- 4 to 5 ft . each 3s. Gd. to
A plumy-growing variety of remarkable elegance, which, when more gencrally known, will entirely supersede the common form.
- lutei - - each ros. 6d. to
-
-


## Conifers and Taxads.

 elegant pyramidal habit, and of a bright green colour. The pollen-bearing, or male plants, are particularly attractive when in flower.
-aurea - each
communis hibernica, 3 to 4 ft .,
per doz. ISs. to $30 \circ$

- Compressa - each 26
- suecica (Swedish Juniper), 2 to 3 ft . per doz. is o japonica albo-variegata, nice plants per doz. $3^{\circ} \quad 0$
RECURVA
- densa
virginiana (Red Cedar), $3,4,5,6$, to 7 ft ., all finely rooted, per doz. 9s., 125., iss. and
— humilis - each
- glauca

4: 0
50

Sabinal (Savin)
per 100, 50 s. to

- very strong per doz.

12s. to IS $\circ$

- prostrata per doz.
is o
- tanlariscifolia, per
doz. 12s. to $18 \circ$
squamata per doz. is o
TRIPARTITA, " $30 \circ$
Larch. See Iarix.
LARIX - Larch.
eurorea pesidula (Weeping Larch), each 5 s. to
The branches are very long and gracefully pendulous, pro-

LARIX-continued. s. $d$. ducing a weeping character.
K.empreri (Golden Larch) - . each $21 \circ$ LIBOCEDRUUS.
DECURRENS (Thuja gigantea of gardens) 1 ft . per $10050 \quad 0$

- $1 \frac{1}{2}$ to $z \mathrm{ft}$. per doz. is o
-3 to 4 ft . per doz. 30s. to 420
- 5 ft . . per doz. 60 o

A fine columnar evergreen tree, hardy, elegant, and freegrowing.
Picea. - Silver Fir.
Noble evergreen trees. P. Pinsapo, Nordmanniana Nobilis, lasiocarpa, and magnifica are the finest and most distinct, and are worth planting everywhere. ceprialonica pet doz. I8s. to $30 \quad 0$ FIRMA each 35. 6d. to $5 \circ$ lastocarpa (I'arsonii),

- seedlings, in pots per doz. is o
-3 to 4 ft . each 7s. 6d. to 106
- splendid specimens, $5,6,7,8$, and 10 ft . high, each 2Is. and upwards.

A grand tree, handsome, and distinct, and perfectly hardy.
magrifica (nobilis robusta),

- seedlings, 2 to 3 ft ., each 7s. 6d. . 106


## Conifers and Taxads.

PICEA-continued.
-3 to 5 and 6 ft . 2Is. to 630
We have hundreds of this, certainly one of the handsomest of all the Firs.
nobilis, 9 in. per $10050 \circ$

- 1 ft . - per doz. 18 s ., per $100100 \circ$
- 2 to 3 ft . - per doz. 30s. to $60 \quad \circ$
- $4,5,7,8$, to 10 ft .
high, by 8 to 15
ft . in circumference, 1os. 6 d . to 42 s. and upwards.
Nordmanniana,
- $1 \frac{1}{3}$ to 2 ft .
per doz. r8s. to $30 \quad \circ$ $3,4,5,6$, to 8 ft . 3 s. 6 d . to 215 . and upwards.
- splendid specimens, 10 to 15 ft . high.
Pingapo, $\frac{1}{3}$ ft., per $100100 \circ$
- 2 ft . - per doz. $24 \circ$
$-3,4$, to 5 ft .
each 3s. 6d. to 106
$-7,8$, to 10 ft .
each 21s. to $105 \circ$
One of the most distinct and handsome of the Silver Firs.
PINE. Sec Pinus.
PINUS.-Pine Tree.
austriaca (Austrian Pine),
— I ft, stout, per I,000 $40 \circ$
- I to $I^{\frac{1}{2} \mathrm{ft}}$. per $100 \mathrm{~S} \circ$
-about 2 ft . $21 \quad 0$
Robust, hardy, and of rapid growth, this is an invaluable tree. As a sbelter
s. d. $\mid$ PINUS-continued.
by the sea, or in smoky localities, it has no equal.
Benthamiana, 2 ft . per doz. 30 -
Bungeana (Lacebarked Pine), each 36
Cembra (Swiss Pine),
2, 3 , and 4 ft ., per doz. 18s. to $30 \circ$
densiflora - each 5 ○
excelsa, I to $1 \frac{1}{2} \mathrm{ft}$., per doz. 12 s . to $18 \circ$
insignis - - I2s.to 30 -
Lambertiana, $1 \frac{2}{2} \mathrm{ft}$. each 5 ○
Laricio (Corsican Pine), $\mathrm{r} \frac{\mathrm{l}}{\mathrm{f} \mathrm{ft}}$. per 100 ro Equally valuable with P. austriaca. This tree is not eaten by rabbits.
macrocarpa - each 5 o
MONTICOLA, $\mathrm{I} \frac{1}{2} \mathrm{ft}$. " ${ }_{2} 6$
-5 to 6 ft - - " $\quad 50$
Mugho - - " $\quad$ I 6
Pumilio - - " I 6
PYRENAICA
each Is. Gd. to 36
Strobus pumila ea. 3s. 6 d .
sylvestris pumila for to 6
Two very remarkable dwarf bushy forms of the Pine tree, the latter related to the Scotch Pine, the former to the Weymouth.
RETINOSPORA.


## ERICOIDES

per doz. ys., 12 s . to $18 \circ$
A small pyramidal glaucous green shrub, turning purple in winter.

Conifers and Taxads.

RETINOSPORAcontinued.
FILICOIDES - - each 50
FILIFER. $-\quad$ - $\quad 20$
Remarkably elegant, with long, slender, pendent branches.
Ketelen:R11
each 15. Gd. to 36
LEIPTOCLADA
each is. 6d. to 36
I.YCOPOIIOIDES
each 3s. 6d. to 106
ontusi, $1 \frac{1}{3} \mathrm{ft}$. per doz. I2 0 -3 to 5 f .
per doz. 305 . to 420 -8 to 10 ft .
each 5 s. to 106 (HBTUS ILEREA each 36

- NANA AURED-VARIE-

Gata, each 3s. Gd. to io 6

-     - albo-varifgata
each 36
PISIFERA, 3 to 5 ft .,
per doz. ISs. to $t=0$
- 6 to 10 ft . each

3S. Gd. to 106

- ARGENTEA - each 26
- auria each is. Gd. to 36 plUMODA - is. 6d. to 36
- allest, nice plants,
per 100,100
$-1 \frac{1}{2} \mathrm{ft}$. stout
per doz.
$30 \quad 0$
SILISUURI 2 ft " 420
DENHALK 'TrEE
ADlantifolia, stan-
dards, 6 to 8 ft., per doz. $30 \quad 0$
SCIADOPITYS.
each 30
verticillata (Um-
brella Pine), nice
plants - each 5s. to 210
IAXODIUM.
oisticium (Deciduous
s. d. TAXODIUM-continued. s. $d$. Cypress), 3 ft .
per doz 120
-S to 12 ft . each
2s. Gd. to 76
- PENDLLUM, 2 ft . each 26
--+ to 8 ft .
each 5s. to 106
Certainly one of
the most beautiful of
deciduous trees, es-
pecially in autumn,
when the branches,
with their drooping
spray, appear to be
decorated with red
ostrich feathers.
SEMPERVIRENS
per doz. I Ss. to 120
TAXUS, YEW TRFi.
ADPRESS., $1 \frac{1}{2} \mathrm{ft}$. per doz 150
- 2 to 3 ft . - each 36
- large plants, 4 to 5 ft . high, and wide, cach ros. Gd. and upwards.
- worked as standards, very handsome.
Biccata (Common
Inglish I'ew),
$-1!10=\mathrm{ft}$.
Per 100, 21s. to 500
-2 to $=\frac{2}{2} \mathrm{ft}$.
per 100, 50 s. to 750
- 3 to $3 \frac{1}{\frac{1}{2}} \mathrm{ft}$.
per 100, 100s. to 1500
+ to 5 ft .
per duz. 24 s. to 420
- $1,7,108 \mathrm{ft}$. each 50
to 1os. 6d. and upwards.
- a large number of fine l'ews, 9 to 15 ft . high, with large heads, and safe to
remove, each 15 s.
and upwards.

Conifers and Taxads.
'TAXUS-contimued.

- AUREA (Golden Yew), $1 \frac{1}{2}$ to 3 ft .
per doz. 30s. to $60 \circ$
We have the finest stock of Golden Yews to be met with in any nursery. Many are worked, and are pyRamidal in form, with from 3 to 6 and 8 ft . of gold. We have them also as sTANDARDS with globular heads of many ycars' growth, and quite unique.
baccata Dovastoni
(Weeping Yew)
per doz. 18s. to 420
- worked standards, each 2 Is. and upwards.
- elegantissima ift., per doz. 120
—— $1 \frac{1}{2}$ to 2 ft . per doz. 30 o
- -standards, worked on Irish and English, very ornamental, ca. 7 s .6 d . and upwards.
- erecta (Upright English Yew), 3 ft . per doz. 180 - 5 to 6 ft . each 5s. and upwards.

An clegant, smallleaved, compact pyramidal shrub.

- ERICOIDES - - each 36
- monstrosa - each 36
- fas'rigiata (Irish

Yew), handsome plants, 3 to 6 ft .
per doz. I8s. to $60 \circ$

- 7 to 8 ft .
per doz. 84 s. to 1200
s. $\quad$. TAXUS-continued. s. $d_{0}$
- FRUCTA-Luteo (Yel-low-berried Yew), 3 to 5 ft . - each 76
Covered inautumn with bright orangeyellow berries.
JAPONICA, $1 \frac{1}{2}$ to 3 ft ., each is. Gd. to 50
THUJA.-Arbor Vite.
Elwangeriana - each
16
gigantea. See Libocedrus ( $p .7$ ).
Lobbil, 3 to 4 ft .
per doz.
180
-4 to 5 ft . $\quad 30$ o
- 6 to 7 ft . and as much round,
each 35. Gd to 50
- magnificent plants, 8 to 12 ft . high, each 7s. Gd. and upwards. occidentalis (American Arbor Vite), for hedges, 3,4 , and 5 ft ., per 100, 25 s ., 50 . and $75 \quad \circ$
- 5 to 6 ft . - per 100100 o

This is a famous plant for making a quick, good, permanent, and cheap evergreen hedgc. It is thoroughly hardy, bears clipping well, is of very rapid growth, and is not particular as to soil. The hedges in our nursery, which are so generally admired, are composed of this plant.
occidentalis HookEriana (pygmæa) each a 6 A dwarf pigmy

## Conifers and Taxads.

THUJA-continued. form, analogous to the dwarf forms of Abies.

- LUTEA - - each 106
- Vervaeneava
per cloz. 18s. tn 300
A distinct kind, with foliage of a yellowish hue in winter. orientalis (Chinese Arbor Vitx : Biota), per doz. Izs. to 18 ALIREA, $1 \frac{1}{3}$ - jer 100100 jer doz. 180
-     - 2 ft . high, 3 to 4 ft . in circumference,
per doz. 3os. to 420 - numbers of fine plants, $3,4,5$ to 6 ft . high, from 12 to 15 ft . in cirumference, the oldest and finest specimens to be found in any nursery, from ros. 6d. each and upwards.

This beautiful dwarf growing dense shrub, the young sुowths of which, in spring, put on a beautiful golden green hue, originated in this nursery.
HLEGANTISSIMA, nice plants, 1 to $\frac{1}{2} \mathrm{ft}$. per doz. 18 o

- $-1 \frac{1}{2}$ to 2 ft . per doz. 30 o
- fine specimens each 7s. 6d. to 210
Another beautiful form of golden Arbor Vita, more erect and columnar than aurea.
s. $\dot{d}$. THUJA-continued. s. $d$.
- SEMPER AUREA, each 76
per doz. Gos. to 840
This is of the same habit as the wellknown Thuja aurea; it retains its beautiful golden hue throughout the year. We have proved it, and recommend it as one of the most distinct and beautiful plants in cultivation.
PEADULA (Biota) each $=6$
plicata, 3 ft . per doz. 18 o
- 4 ft . per doz. 30s. to $4^{2} 0$
ratarica (Biota: pyra-
midalis): 3 ft . per cloz. 180
Warreains, stout plants,
$1 \frac{1}{2}$ to 2 ft ., per 100,500
per doz. 6s. to 12
- $2 \frac{1}{2} 103 \mathrm{ft}$.
per doz. 2s. to 120
- 3 to 4 ft .
per doz. 18 s. to $30 \quad 0$
This is by far the hardiest and best of the Arbor Vitres. There is prohably no more useful evergreen grown.
Zaccariniana
each 3 s. $6 d$. to $\quad 7 \quad 6$
THUJOPSIS.
borealis (Cupressus nutkaensis), 2 to $2 \frac{1}{2} \mathrm{ft}$. per doz. $18 \circ$
-3 to 4 ft .
per doz. I8s. to $30 \quad 0$
-5 to 6 ft .
per doz. 42s. to $60 \quad 0$
- 7 to 8 ft ., and 10 to

I2 ft . in circumference, each 7s. 6d. and upwards.

Conifers and Taxads.
THUJOPSIS-continuct. s. d. WEILINGTONIA- s. d.

- volabrata
per doz. 30s. to 60 o - Variegata
per doz. 30s. to 60 o
1.ATEVIRENS - - each 36

Standishil - - each 50
WELLINGTONIA.
The Big 'Iree or Mammoth Tree of the Americans, and one of the most re-
continued.
markable evergreen
trees yet introduced.
gigantea, stout plants,
per 1001000

- I? to 2 ft . per doz. 30 o
-+ to 5 ft .
each 7s. 6d. to 106
$-6,7,8$ to 9 ft .
each 2 Is. to $6_{3} 0$
YEIV. Sec Taxus (p. 9).


## HARDY ORNAMENTAL AND FLOWERING TREES.

Here will be found many plants which furnish masses of beautiful flowers, either in the early spring months or later in the year. When to these flowers are added the varied tints assumed by the foliage of the different species, especially in spring and autumn, it will be evident that such trees are invaluable for brightening up the sombre masses which evergreens alone, and Conifers in particular, are apt to present.

AC.ACIA. Sce Rubinia s. d. ( $p$. 19).
ACER.-MAple.
COLCHICUM RUBRUM, per doz. I2s. to 300
In this handsome tree the young leaves are crimson.
Negundo (Ash-leaved Maple), 7 to 9 ft . per doz. 6s. to 120

- VARIEGATUM, dwarfs,
per doz. 6 s . to 9 s. and 120
- standards
per doz. ISs. to 420
One of the most strikingly beautiful of variegated trees, remarkably effective

ACER-continued.
when growing intermixed with dark coloured evergreens, and equally attractive in masses on the laivn, or in the shrubbery.
flatanoides (Norway Maple), 7 to 8 ft .

$$
\text { per } 100,2 \text { IS. to } 30 \circ
$$

- fine trees, io to 15
ft., - per doz. I8s. to 420
- Laciniatum (Eagle's

Claw or Kite's Claw
Maple), - per doz. 18 ○ platanoides LorberGll, 5s. each

## Ornancntal and Flowering Trees.

ACER-comtinued.
platanoides Schwed-
LIERII, - - each 5 o POIFMORPIIUM ATROpURPURELM.

- Dissectlim.
- paluatifidim.
- ROSEA MARGINATUM.
- sanguinea. - each 50

Pseudo-Platants (Sy-
camore), 7 to Sf .
per 100,215 . to 300

- fine trees, 10 to 16 ft .,
per doz. 18s. to 60
-IURPUREUVI
per doz. Gs, to Iz 0
-     - fine standards, 12 to 14 ft .
each 5s. to 76
- albo-variliciatual
per doz. izs. to 30 o
RURRUM (Scarlet Maple), 6 to $\& \& 10 \mathrm{ft}$.,
per dor. Gs. tu 300
sacchanints (Eugar
Maple), 5 ft . per dos. 6
STRIATUM (Snake-bark
Maple), 4 ft. per doz (s o
Thtarictim, 5 ft .
per doz. 60
A:SClILUS.-- HORsF:
Chrstatr.
Hippocastanum, 3 to
+ft . - per 100 \&
- 6 to 8 ft .
per 100, 30s. to 500
- $S$ to 10 ft ., stout
per 100 , roos. to 1500
- fine trees, io to

I5 ft., - per doz.
30s. to $S_{+}$

- FLORE-PIFNO, each is. 6d. to $=6$
- 10 to 14 ft ., fine
trees with good
heads, 305 . to Gos.

AESCULUS-continued. per doz. and upwards.

More beautiful even than the common form, on account of the longer duration of the blossoms.

- RUBICUNDA ROSE. 1 (Scarlet Horse Chestnut), 5 to 6 ft . per doz. 12s. to 130
- ro to 12 and 15 fl., fine handsome trees, with large heads, 3s. Gd., 5s. to 75. Gd. each and upwards.
AHIANTUS.-TREE OF rif: Gods.
Glanidulosa, 4 to 6 ft . per cloz. 60
- S to 10 ft .
per doz. 185. to $4=0$
ALIDER. Sec Alsú
( $f \cdot 13$ ).
AIMOND. See AMY゙:Dales ( $\mathrm{f} \cdot \mathrm{r}_{3}$ ).
AI.NUS- ALHER:
GI.UTINOSA LACINIATA each I 0
IMPERIALIS ASPLLENI. FULIA LACINIATA

$$
\text { each } 16
$$

The leaves of this variety are very elegantly cut.
AMEI.ANCHIER.
Botryapium (Snowy
Mespilus),
Small - per doz. r, o Larger - - :, is o
ILORIDA - " IYGDALUS -
AMYGDALUS.-"
Almond.

## Ornamental and Flowering Trees.

AMYGDALUS-continued.
communis (Common s. d. Almond), standards per doz. 12S. to $18 \quad \circ$ communis macrocarPA, standards, per doz. I2s. to is o
Persica flore-pleno
(Double-fld. Peach), per doz. izs. to $18 \circ$

- Camellifflora (Camellia-fld. Peach), - per doz. res. to $18 \circ$ - diantriflora (Car-nation-fld. Peach) per doz. 12s. to $18 \circ$
apple. Sce Pyrus ( $p$. I 8).
ARALIA.
canescens (japonica) each I 6
-4 to 5 ft .
each 2s. Gd. to 36
ASH. Sec Fraxinus
( $p .16$ ).
ash, moUntain. Sce Pyrus ( $p$. 18).
ASPEN. See Populus ( p . 17).
BEECH. Sec Fagus ( $p, 15$ ).
BETULA.-Birch.
alba (Silver Birch), 6 to 8 ft ., - per $10021 \circ$
-8 to 10 ft .
per 100,30 s. to $50 \quad 0$
- 10 to 15 ft .
per doz. I8s. to $30 \circ$
—CRISPA ,, 18 s . to 30 o
- fastigiata - each 20

A new and very fine variety of Birch, as upright in growth as a Lombardy Poplar.

- incisa pendula (Cutleaved Weeping Birch),
per doz. i8s. to $24 \circ$

BETULA-continued. s. d.
One of the most beautiful weeping trees in cultivation.
Pendula (Weeping
Silver Birch), fine
standards per doz. $42 \circ$
pendula Elegans, each 3s. 6rl. to 76

- pendula Youngi
(Young's New Weeping Birch), each 3s. Gd. to 76
A very distinct, desirable, and picturesque tree.
Betula purpurea.
(Purple Birch)
each 10s. 6d. to $21 \circ$
BIRCH. Sce Betula
( $p$. I $_{4}$ ).
CALOPHACA.
wolgarica - - each $=0$
CARAGANA.
standards, of sorts.
CASTANEA. - Chest.
NUT.
vesca (Spanish Chest-
nut), 8 to 10 ft , fine
per doz. 18s. to $30 \circ$
vesca asplenifolia (heterophylla laciniata), up to 7 or 8 ft., - per doz. 18 s . to 420
- cucullata, pyramids, fine, - per doz. 420
- aureo-variegata
(Golden Variegated Spanish Chestnut), per doz. I8s. to $4^{2} \circ$ CATALPA.

SYRINGerfolia, 5 to 6
ft., - per doz. 6s. to I2 o

- standards
per doz. 18 s. to $4^{2} \circ$


## Ornamental and Flowering Trees.

CATALPA-continued.

- aurea, fine plants, each 3s. 6 d. to
A decorative tree of great merit.
CERASUS:-CHERRY.
Malialee variegata each I 6
Padus (Bird Cherry) per doz.
Cerasus pumila pendula - per doz. $18 \circ$
sinensis roseo-plena each I 6
Handsome double rose-coloured flowers. vULGaris flore-pleno (Double - blossomed Cherry), standards and dwarfs per doz. 12s. to Watereril - e each $=0$ CHERRY. Sce Cerra$\operatorname{sus}(\nmid, 15)$.
CHESTNUT. Secastanea (p.14).
CHESTNUT, HORSE.
Sic Eisculus ( $p$. 13). and Pavia ( $p$. 17).
CRAB. Sce Prru's (p, 18).
CRATAEGUS.-THORN.
Oxmicantia
-revidla (Weeping Thorn),
per doz. 18 s. to $30 \quad \circ$
- punicea (Scarlet Thorn),
per do 2 res. to is o
- puxicea florie. pleno xova, dwarfs and standards, per doz. izs. to is 0 This new Double Crimson Thorn, is a most valuable acquisition.

CRATAGUScontinued.

- multipiex (Double White Thorn), 4 ft . and upwards, per doz. i2s. to is o rlore pleno (Double Pink Thorn), 4 ft. and upwards per doz. i2s. to is o MANY OTHER ORNAmevtal kinds.
CyTISUS.
Laburnua (Common Jaburnum), standards per doz. izs. to $30 \circ$
- Autumnalis (Autumn flowering)
- Curled Leaf
- Wecening
-W'eeping izs. to
Sweet Scented
Scotcl?
alpinus (Scotch Laburnum), standards per dolo. 12S. to 180
- plepurascins (Purpic Laburnum), standards,
per doz. 12s. to is o
Watererii (Waterer's Laburnum),
per cloz. 18s. to $30 \quad 0$
Raised here many years ago, and undoubtedly the finest of all the Laburnums, being remarkable for the large clusters of its showy bright yellow flowers.
FLM. See Ulamus.
FAGUS.-Beech.
ferruginea latifolia (Chestnut-leaved Beech), per doz. iss. to


## Ornamental and Flowering Trees.

FAGUS-continued. s. $d$. FRAXINUS-continucd. s. $d$.
sylvatica (Common
Beech), S to so ft ., fine per doz. 18 s . to 30 o

- purpurea (Purple Beech), 3 to 4 ft .
per doz. Gs. to $12 \circ$
—— 6 to 8 ft .
per doz.' I ss.' ${ }^{\text {'to }} 30$ ○
—— 10 to 14 ft .
per doz. 42s. to 120 ○
- pendula (Weeping Beech),
per doz. 42s. to, $S_{4} \circ$
- heterophylla
(Cut-leaved Beech)
per doz. ISs. to $t=0$
- asplenifolia(Fern-
leaved Beech)
per doz. I8s. to $4^{2} 0$
- cristata (Crested
or Curled-lenved Beech),
per doz. iSs. to $4^{2} \quad 0$
I RAXINUS.-Ash.
excelsior aucude-
rolia, standards
per doz. ISs. to $30 \circ$
- aurea, standards,
per doz. ISs. to $30 \quad 0$
- aurea pendula
(Gold-barked
Weeping Ash)
per doz.
ISs., 30s., 42s. to 60 o
excelsior laciniata, standards,
per doz. ISs. to $30 \quad 0$
- pindula (Weeping

Ash), fine tall stems
per doz. 42 s. to $S_{4} \circ$ juglandifolia (Wal-nut-leaved or Green Ash), standards,
per doz. 18s. to $30 \circ$
ORNUS (Flowring

Ash), standards, per doz. I8s. to $30 \circ$ AND OTHER SORTS.
GLEDITSCHIA.
triacanthos (Honey Locust, or Threethorned Acacia), 5 to 6 ft . per doz. 6 s. to $12<$ sinensis, 5 to 6 ft .
per doz. 6s. to $12 \quad \circ$
GYMNOCLADUS.
canadensis
each Is. Gd. to 36
HALIMODENDRON.
argenteum - each 26
Hawthorn. Sce
Crategus ( $p$. 15).
JUGLANS.- Walnut.
MACROPHYLLA - each 5 ○
regia (Common Walnut), 4 ft . - per doz. 6 a

- 6 to 7 ft .
per doz. gs. to $1=0$
-fine" standards
per doz. 42s. to $60 \circ$
- laciniata (Fernleaved Walnut),
per doz. 42s. to $60 \circ$
Distinct on ac-
count of the cutting
or lobing of its foliage, which is developed in a very irregular manner, the result being handsomely divided fernlike leaves.
- pendula (Weeping Walnut), -- each 76
KOLREUTERIA.
paniculata - per doz. 6 o - larger
per doz. i8s. to 300
LABURNUM. Sce Cytisus ( $p$. $\mathrm{I}_{5}$ ).


## Ornamentul and Flowering Trees.

LIQUIDAMIBAR.
STYRACIFLUA
per doz. gs. to is o
A handsome tree, the leaves of which turn in autumn to a deep purplish red.
IIME: See TiLfa ( $p, 17$ ).
LIRIODENIRON.-
Tulifp Tree. tulipifera
per doz. Gs. to 180

- alkeo maculatlem each 5 ○
LOCUST TREE. Sec
Robivia (p. ig).
MAGNOLIA.
tripetali (U'mbrella
Tree), 6 to 8 ft . each 3 s. 6 d . to 5 o
Malus. See PYRUS ( S . 18)
Maple $\operatorname{Sec}$ Alek
( $力 .12$ ).
MESPIlUS. Sici Am. Lascimpr ( $\rho .13$ ).
NEGUNLDO. Sé ALER ( $\rho \cdot 12$ ).
NUTTALII CFRASSI-
FORMIS - tach $=0$
Sie Prexis: Califoremia
(t. 20).

OAK. Sé Qubrect (Ap. 19 and 29).
ORNES. Ser Frixives ( $力, 16$ ).
PAUIOVIA.

## imperialis

per doz. 12s. to $30 \quad 0$
P.IVIA.-Smouth Horse Cilestavel.
cabrorvica (Californian Buckeye), each flitia (lellow Horse Chestnut), fine standards, each 2 s .6 d . to
s. d. PAVIA-continuct. Bears yellow flowers; the decaying leaves are also yellow.
MaCROSTACHYA, perdoz. $18 \circ$
PEACH. See AMYGD. Lus ( $p$. 13 ).
PEAK. See PyRus (f. 18).
PLaNE. Sic Platanus (f. 17).

Platanus. - Plave.
occidentalis (acerifolia), 3 to 4 ft ., per $100 \quad 30 \quad \circ$
-4 to 6 ft .
per roo, 40s. to 500
-fine, 10 to 15 ft ,
per doz. 42 s. to 1200
Too much cannot be said in praise of this Plane as a town tree.
URIETHALIS, $S$ to raft,
per doz., ris. to $S_{4} \circ$
POPLAR. Sec Popuic: ( $p$ 17).
populus.-Poplar.
1 bi. (Abele, or Silver Poplar), 3 to +ft . per $100=1 \quad 0$
-- 7 to 8 ft . per doz Gs. to 9 ) ANGULATA (Carolina

Poplar) - - per doz. 120 balsamifera (Balsam Poplar), 7 to 8 ft . per doz. 60 canidensis nova, 5 ft . per $100 \quad 21 \quad 0$ - - fine trees, 16 to 18 fl , each $3 \mathrm{s}$. . 6 d . to $5 \circ$ This is a new variety of Poplar. We have plants of it three years old $\mathrm{I}_{5} \mathrm{ft}$.
to 20 ft high, and

## Ornamental and Flowering Trces.

POPULUS-contimued. s. d. stout in proportion. It is the fastest growing tree we are acquainted with.
candicans (Ontarian Poplar), 7 to 8 ft .
per doz. 60

- fine trees, 12 to 15 ft., - per doz. 30s. to 420 FASTIGGATA (Lombardy Poplar), 10 to 12 ft . per doz. 6s. to 120
monilifera (Black Italian Poplar), 8 to 12 ft ., per doz. Gs. to 120

A rapid growing tree, which thrives well in towns.
Trenula (Aspen)
per doz. 6s. to 120

- pendula (Weeping Poplar),
per doz. 18 s. to $84 \circ$ PTELEA.
trifoliata
per doz. 125. to $18 \circ$ PYRUS.

Aucuparia (Mountain Asin), 5 to 6 ft .
per $100,8 \mathrm{~s}$, to 126
-8 to 10 ft .
per 100,30 . to $100 \circ$

- larger, 12 to 15 ft .,
per doz. 18 s. to 420
- pendula (Weeping Mountain Ash) per doz. 18 s. to 300 Fructu-Luteo (Yellow Mountain Ash), per doz. 6s. to I 2 o
——Io to 12 ft .
per doz. I8s. to 300
hybrida (Bastard Service Tree), 7 to 10 ft . per doz. 12 s , to 180

PYRUS-contimucd
Malus ibaccata (Scarlet Siberian Crab) per doz. 12 S . to $18 \circ$
Malus floribunda, per doz. I2s. to 180 One of the most brilliant of all springflowering trees. It is of moderate stature, and of rather slender yet free growth. Its long flexible shoots are covered from end to end early in May with blossoms, which are of a rich crimson outside, and in the bud state resemble ropes of cherries, while, being white within, they show, when expanded, a beatutiful contrast of colour. This tree is worthy of a prominent place in every garden, and must charm every one by its profuseness of bloom, and the brightness and play of its colouring ; a real gem.
pinnatifida (Pinnati-
fied Service Tree), 7
to 10 ft . - per doz. i $\mathrm{S} \circ$ SALICIHOLIA (Weeping),
per doz. 3os. to 420
spectabilis (Chinese Crab)
per doz. 125. to 150

- ROSEO-PLENA
per doz. 12s. to is o
A wonderfully


## Ornamental and Flowering Trees.

## PYRUS-continued.

beautiful springflowering tree, the branches of which, when in bloom, may be compared to garlands of double pink roses.
VESTITI (Sorbus)
per doz. 12s. to $18 \circ$
QUERCUS.-OAK.
Cerris variegata
(Silver-striped Turkey Oak) . . each 5 o

- pendula (Weeping

Turkey Oak), stan-
dards each 3 s. 6 d . to 76
coccinea (Scarlet Oak),

+ to 5 ft . per $10050 \quad \circ$
$-S$ to 10 ft .
per doz. izs. to 300
- fine stout trees, 12 to 15 ft .,
each 3 s. $6 d$. to
The searlet Oak is a handsome frecgrowing tree; the leaves turn to a bright red in aut. tumn.
palustris ( Pin Oak ), 4 to 5 ft . - per 10050 -
- fine standards, about 10 ft .
per doz. 3 os. to $+=0$ Robur concordia
(Golden Oak),
each 3 s. Gd. to
- heterophylla
(Fern-leaved Oak) each 3s. 6d. to 50
- pendula (Weeping English Oak), tach 5s. to 76
- vigra (Purple Oak), each 5s. to 76

ROBINIA.-Locust
Tree.
hispida (Rose Acacia),
each 1s. 6d., per doz. 125. to $18 \circ$
A beautiful low tree, producing in summer drooping racemes of handsome deep rose-caloured flowers.
-GRANDIFLORA, each i 6
per doz. 12s. to $18 \quad \circ$
Pseudacacia (Com-
mon or False Acacia), 6 to 8 ft . per doz. 6s. to $9 \quad \circ$

- Bessoniaja
per doz. res. to $30 \quad 0$ A noble-looking tree, remarkably vigorous, and more densely leafy than other kinds.
- Decaisneana, each Is. 6d., per doz. 125 . to $18 \circ$
- pevdula (Weeping Acacia), standards each 3 s. 6d. to 50
- aurea (Golden Acacia), standards each 36
- umbraculifera (inerinis : Parasol Acacia), standards each 36 per doz. 42s. to $60 \circ$
- viscosa (glutinosa)
per doz. 12s, to 18 o
S.ILIX-WILLOW.
babylowica (Weeping
Willow), standards
per doz. 125. to $30 \quad 0$
-mascula -
per doz. 18 s . to
30 . A distinct variety of Weeping Willow.


## Ornamental and Flowering Trees.

SALIX--continucd.
Caprea pendula (Kilmarnock Weeping Willow) - per doz. 30 ○ Daphnoldes " 3 ○ r.AURIFOLIA " 3 ○ PUR1UUREA PENDULA (American Weeping Willow),
per doz. 125. to $30 \quad 0$ REGALIS - - per doz. 30 rosmarinifolia per doz. 6 o SERVICE TREE. See Pyrus ( $p$. 18).
SOPHORA.
japonica per doz. 6s. to $12 \circ$
$=$ - PEndula
per doz. 6os. to $S_{4} \circ$
One of the most characteristic of all weeping trees, and one of the greatest elegance and beauty.

- variegata each 2s. 6d. to 36
sorbus.-See Pyrus
( $p, 18$ ).
SyCAMORE. Sce Acer ( $p, 12$ ).
THORN. Sce Cratedgus ( $p .15$ ).
tilia.-Line.
alba (argentea)
- pendula, standards, each 3s. 6d. to 76 This variety forms a noble weeping tree.
europiea (Common Lime Tree),
- 5 to 6 ft .
per 100, 30s. to 400
- 7 to 8 ft . - per 100, 50 -
-8 to ic ft . per doz. 9s. to 18 o


## - 10 to 12 ft .

per doz. 245, to $30 \quad 0$

TILIA-continued.
s. $d$.

- 15 to 16 ft .
per doz. 42 s. to 840
- 16 to 20 ft ., splendid trees, 7s. 6d. to ios. ©d. each.

A grand tree for avenues, and for open situations in park scenery, and one which should never be omitted in the neighbourhood of country mansions. Its fragrance is a great recommendation.
TULIP TREE.-Sce
Lirionendron ( $p .17$ ).
ULMUS.-El.m.
AMERICANA PENDULA (Scampston Weeping Elm) per doz. 30s. to 420

One of the finest weeping trees.
CAMPESTRIS aUREA (Golden Elm),
per doz. 18s. to $42 \circ$
Very ornamental as a standard.
Campestris pendula
(fol. argent. Variega-
tus) - - per doz. 420
The New Variegated ilieeping Elm. montana pendula (Wecping Emm), per doz. 3os. to 120 ○
A beautiful and highly characteristic tree.

- purpurea (Purple Elm), per doz. 6s. to 18 s. \& 30 o glabra vegeta (Chi-

Omamental and Flowering Trees.


## HARDY EVERGREEN AND DECIDUOUS FLOWERING SHRUBS, \&c.

These are plants in exeryday demand. It is here that we find the materials for planting slorubberies; and from amongst this class of plants the chief garniture of home pleasure-grounds has to be sought.


## Hardy Shrubs.

AUCUBA-continued.

- mascula (Male) per doz. I2S. to $30 \quad \circ$
- seedlings, nice plants - per doz. $6 \circ$
- larger, per $100 £ 5$, per doz. 18 s . to
bamboo. See Arundinaria and Bambusa. ( $力 .21$ ).
BAMBUSA.-BAMBOO.
Fortunei (Variegated
Bamboo) per doz. i8 ○
bay. See Laurus.
( $p$ p. 27 and 28).
BERBERIDOPSIS.
corallina - - each 26
BERBERRY. See Berberis.
( $p, 22$ ).
BERBERIS.-BERBERRY.
Jamesonii, per doz. 6 o Aquifolium, I to $\mathrm{I} \frac{1}{2}$
ft., stout and well
rooted
per 100, I2s. 6d. to $21 \circ$
- picked bushes, larger,
per doz. 6s. to $12 \circ$
Bealii, stout plants,
per doz. i2s. to $18 \circ$ Allied to B. japo-
nica, which see.
Darwinit, $1, ~ I \frac{1}{2}$, and
2 ft ., - per doz. 6 s ., 12s., and 18
dulcis - per doz. 6
Empetrifolia ", 120
Fortunei - each i 6
japonica, stout plants, per doz. $6 \quad \circ$
- larger per doz. 12 S . to 18 ○ neubertii - per doz. 90 STENOPHYLLA - each I 6 vulgaris (Common

Berberry), per doz. 6 o

- ATROPURPUREA per doz. $12 \circ$
s. $\quad$ d. BOX-EDGING per 100 yards BOX TREE. See Buxus. ( $p$. 22 ).
BOX THORN. See Lycium ( $p .28$ ).
RROOM. See Cytisus ( p .24 ).
BROOM, SPANISH.
See Spartium ${ }^{2}$ ( $p \cdot 30$ ).
BUDDLEA.
globosa - each 10
BUXUS.-Box Tree.
balearica (Minorca
Box), per doz. 9s. to 18 ○
sempervirens (Common Box), 2, 3, 4, 5, 6 to 7 ft . high, per doz., 6s., i2s., 18s., 305., 42s. and upwards.
— pyramids, up to 8 ft . high, each 1os. 6d. to $42 \quad 0$
- argentea (Silverstriped Box)
- pyramids, up to 8 ft . high
- aurea (Gold-striped Box)
-- pyramids, up to 8 ft . high

For sizes and prices of these two varieties, see B. sempervirens.

- latifolia nova
(New Broad-leaved
Box) each Is. 6d. to 36
- variegata nova (New Silver-striped Box) each Is. 6d. to 36
- myrtifolia (Myr-tle-leaved Box), per doz. 18s. to 42 s. and upwards.


## Mardy Shrubs.

CALYCANTHUS- s. $d$. Allspice. See also Chimonanthus ( $p .23$ ). FERTILIS - - each elorines (Carolina Allspice - - each 16 levigatus - - , I 6 PRECOK - - " i 0
CEANOTHUS.
AZUREUS - - $\quad, \quad 2$
GRANDIFLORUS - " 26
DIVARICATU'S - " I 0
CERASUS.-CIERRY:
Laurocerasus. Sec Common Laurel ( $\mathrm{S} \cdot 27$ ).
I.U'Siranica. See Portugal Laurel (p. 27). YULGARIS FLORE-1'LENO (Double-fld. Cherry). dwarfs - - each
CERCIS.-JU゚DAS Tree.
Silievistruvi - each

Fortunei (Chusan Palm) - - each 16 HUMILIS - - ", 16 CHLMON.NTHUS.

FRAGRANS (Calycanthus precox), - each I 6
CHIUNANTHUS. sNow Flowir.
vikglivil (linge Tree)
each I 6
CISTUS.
l.adaniflerls (Gum Cistus), per doz. ys. to 120

One of the most splendid of fowering shrubs, its white flowers beingmarked with rich crimson spots at the base.
IAURIFOLIL's - per doz. 60 OTHER KINIS, in pots, per doz. Gs., 9s. and 120

CLETHRA. s. d.
acuminata - - each i 0
ALNIFOLIA - - " 16
COLUTEA-BladDER
SENNA.
ARBORESCENS per doz. 60
-CRUENTA - ," 6 o
Pocockn (haleppica)
per doz. 60
COMPTONIA.
asplenifolia (Fern-
leaved Gale), - each i 6
CORCHORUSS. Sce
Kerria ( $p .27$ ).
CORNUS:-Dociswon.
.II PA (Scarlet Dogwood)
per doz. 40
per 100210
Valuable in planting shrubberrics, on account of the bright coral-red colour of its bark.
nesclit (Comelian (herry) - per doz. 60

- varifgata - each 16
mitrica variegata ,, I 6
CORIIUS.-Hazel.
Avellina
- illiturea
per doz. 12s. and $18 \circ$
-     - 4 to 5 ft . 1 Ss. to $30 \circ$
- pendela - each 36

COTONEASTER.
AFHEIS - each io
micropistla per doz. 0 o
Simoneti - ", 60
ThMMFOLIA " $0 \circ$
Whelleril , 60
CRAB. Sie Pyrus (p. 18).
CR.ITAEGUS. SCC
also P .15.
Pyracantha, in pots. per doz. $12 \circ$

- FRUCTU-LUTEO (ycl-
low-bertied), per doz. $12 \circ$

Hardy Shrubs:

CURRANT. See Ribes ( $p .30$ ).
Cydonia, See Pyrus ( $p$. 29).
CYTISUS.
albus (Portugal Broom) per do\%. 4 o per $100 \quad 20$ o
scoparius (Common Broom), strong and well rooted per do\% 3 ○ per $10021 \circ$

- Pallidus, in pots, per doz. 6s. and $9 \quad \circ$ DAPHNE.

The flowers of these pretty low shrubs are remarkably fragrant.
Cneorum - - per doz. 120
—major - - ", 18 o

- variegata - ", 120

Mezerfum (Red Meıereon),
per doz. 12s. to $18 \circ$

- alda (White Mezereon),
per doz, 12S. to $18 \circ$ PONTICA, strong
per doz. 12s. to is o
1)FSFONTAINEA.
spinosa - each = 6
1)ESMODIUM.
penduliflorum each i 6
DEUTZIA.
candidissima fl. pl.
per doz. 9 ○
crenata flore-pleno per doz. $6 \circ$
- Fortunei " íz o
gracilis - - each i o per doz. $6 \circ$
SCABRA each is.; per doz. 6 o IMIORPHANTHUS. handchuricus
each is. 6 d. to 36

DIMORPHANTHUS- s. $d$. continued.

A hardy tree, with palm-like habit, and Aralia-like foliage.
EL ÆAGNUS.-Oleas-
TER.
japonica variegata
each I 6
ELDER. Sec Sambucus (p. 30).

ESCALLONIA.
macrantha, in pots, per doz. 60
montevidensis, in pots, each 1 o
rubra, in pots ", i o
EUGENIA.
Ugni - - each i 6
EUONYMUS.-Spindle: Tref.
japonicus - per doz- $12 \circ$

- Latifoliús alboVARIEGATUS, per doz. iz 0
-     - AUREO-VARIEGA-
tus . - . per doz. $12 \circ$
-     - flavescens each i 6
radicans variegatus
per doz. $6 \circ$
EXOCHORDA.
(iRandiflora (Spirea
grandiflora), per doz. is ○
FABIANA.
imbricata - each i 6 FILBERT. Sce Cory-

Lus ( p .23 ).
FORSYTHIA.
Fortunei per doz. $12 \circ$
Very free-growing and of trailing habit, like F. suspensa; will rapidly cover a wall from to to 20 ft . high.
suspensa - - per doz. $12 \circ$
$\Lambda$ handsome pro-fuse-flowering free-

Hardy Shrubs.

FORSYTHIA-con-
tinued.
growing trailing
shrub,
perfectly hardy:
IIRIDISSIM., strong per doz. 6s. and $9 \quad 0$ FOTHERGILIA.

ILNHOLIA - - each I 0 lRINGE TRFE. Sce Cihoninthus ( $\rho \cdot 23$ ).
FURZE. Sce ULEX (p. 31 ).
(idLE. Sic Myrica (力. 28).
G.1LE, FERN-LEAVED.

Sce Comptonia (p. 23).
GARRYA.
rLLIPTICA - . each I 6
A handisome evergreen shrub, suitable for covering walls, and very ornamental, from the profusion of its graceful catkins, which are often from $S$ in. to I ft . long, produced in mid-winter.
(iENISTA. Sec CyTIš ( $\mathrm{A}, 24$ ).
GORDONI.1.
LASIANTHUS - each 26
GLEEIDRES ROSE.
See Viburnua ( $f \cdot 31$ ).
H.1LESI.1.

TETRAPTERA (SNOW:arop Tree), . each 16
HAMAMEIIS.-Wisch Hazer.
virginica - - each 16 H BISCUS .

STRIACL'S (Althcea fritex) of sorts,
per do\% 12 s . and 180

- Flore-pleno, of sorts, per doz. 12 s . and


## s. $d$.

$-$

.

 r-

HIBISCLS-continued. s. $\quad$. The Altha'a frutex. is one of the most ornamental of flowering deciduous shrubs, producing its, large and beautifullycoloured mallowlike flowers in the months of August and September. It grows well in smoky districts, and is hence specially valuable. The doubletlowered varieties of this are some of the tinest of all the hardy* deciduous shrubs which are cultivated for the beauty of their blossoms.
HOILY. Sic ILEX ( Nf .26 and 27).
HONKISSUCKLE. Sec LONICREA ( $t \cdot)$. HYI)RANGEA.

OraťsA - - each 1 6 JAPUNICA VARIEG.ITI , i 0 A fine variegatedleaved plant.
PANICLLATA GRANUL lLORA, each [s. Gd. to 26 A low, deciduous shrub of a highly ornamental character, bearing great pyramidal panicles 1 ft . in depth, and 2 ft . in circumference, crowded with large white flowers. It is unquestionably one of the finest hardy deciduous plants known.

## Hardy Shrubs.

HYPERICUM.-St. John's Wort. calycinum (Aaron's

Beard), - per roo 8 o

- nice clumps, per doz. $4 \circ$ per 1002 I 。
uralum - . . each i o ILEX.-Holly.

The first place amongst ornamental evergreen shrubs must be given to the Holly and its varieties, of which the finest stock of all kinds and sizes to be found in Europe will be met with in this nursery. All the handsomer kinds of Variegated Hollies, from 3 ft . to 8 ft . or 10 ft . in height, are here grown by thousands. The plants should be seen, and the prices obtained on the spot, as it is impossible by description to convey any adequate idea of the beauty of the plants.

Green Hollies.
Aquifolium (Common Green Holly), for hedges, stout and finely rooted, $\mathrm{I}_{2}^{\frac{2}{2}} \mathrm{ft}$. high per 1002 Is. to $25 \circ$

- 2 to $2 \frac{1}{2} \mathrm{ft}$.
per $1004^{25}$ s. and $6_{3} \circ$
-3 to $3 \frac{1}{2} \mathrm{ft}$.
per 100, ioos. to 150 o
- 4, 5, 6, 8 to 9 ft ., thousands of most beautiful pyramids,
s. d. ILEX—continued.
s. $d$. per doz. 24 s . to $\mathbf{1} 205$., and upwards.
- fine plants, 10,12 1014 ft . high, I 5 to 20 ft . in circumference, moved since August last.
- angustifolia.
- Hodginsh.
- LAURIFOLIA.

MYRTIFOLIA.
SCOTICA.
These varieties of Green Holly are recommended as being among the most useful and beautiful hardy evergreens in cultivation. We have thousands of them, $3,4,5,6,7$, to 8 ft . high, at from 42s. to 120 S . per doz., and upwards.
AQuifolium rructul.UTEO (Yellow-berried Holly), and other sorts,
per doz. 30s. to 600
Variegated Hollies.
The best varieties from 2 to 3 ft . high, per doz. I8s. to $30 \circ$

- 4 to 5 ft . - per doz. 60 o
$-5,6$, to 8 ft ., and 10 ft ., 7 s . 6 d . to 2 IS . each, and upwards.

Of the following specially choice varieties of Holly we have splendid Pyramidal Specimens, by hundreds, all finely-shaped and! densely - furnished,

## Hardy Shrubs.



Hardy Shrubs．

LAURUS－continued． vorilis（Siveet Bay）， per doz．18s．to $30 \circ$
I．AVANDULA．－LA－ vender．
Spica－－per doz． 30
LavFNDER．Sce La－ vandula（ $p, 28$ ）．
LAVENDER COTTON．
Sec Santolina（ $力 .30$ ）．
LEYCESTERIA．
FORMOSA－－each I 0 per doz． 6 o
LIGUSTRUM．－Privet．
amurense－per doz． 30 coriaceum－－each i 6 japonicual（Japan Pri－
vet），－－per doz． 12 ○
latifoliuni robustum per doz．i8 ○
A new and fine variety．
lucidum（Chinese
Privet），－per doz． 60
variegatua－－eaeh i 6
vulgare
－buxifolium（Box－
leaved Privet），strong
per 1oo，los．to 150
－．uvalifoliun， 2 ft ．
per roo， $15 \quad 0$
-3 to 5 ft ．per doz． $6 \circ$ per roo， 40 －
－sempervirens
（Common Evergreen
Privet），strong，
per 100，Ios．to $15 \quad 0$
Good for hedges
or coverts．
lillac．Sce Syringa （ $力 .30$ ）．
LYCIUM．－Box Thorn． barbarum（Duke of Argyll＇s Tea－tree） each I 0

MAGNOLIA．s．$d$ ．
acuminata－－ 36
Camprelli，strong，eaeh $21 \circ$
conspicua（Yulan）
eaeh 3s． 6 d ．to $5 \quad 0$
－Sollangeana
each 3s．Gd．to 5s．\＆ 76
－Lenne：－each 5 ○ This is probably
the finest Magnolia
in existenee．
CORDATA－each 26 Glauca each 2s．6d．to 36
－Thomsoniana each 3s． 6 d．to $5 \quad \circ$
gramdiflora each 3s．6d．to 76
－fine flowering plants，
6,7 ，and $8 \mathrm{ft} ., 21 \mathrm{~s}$ ．
each and upwards．
－exoniensis（Ex－
mouth Magnolia）
each 2 s．6d．to $7 \quad 6$
－ferritginea
eaeh 2s．Gd．to 76
－Gallissoniensis
each 3s．6d．to $7 \quad 6$
PURPUREA
per doz． 18 s．to 30 o
－giracilis－－each 26
tripetala（Umbrella
Tree），each is．Gd．to 5 －
mahonla．Sce Ber－
beris（ $p, 22$ ）．
MYRICA．－Candle－
berry Myrtle．
chrifers－－per doz 9 ○
（ialii（Sweet Gale）＂ $9 \circ$
OAK．Sce Quercus
（ $力 \mathrm{~F}, 19$ and 29）．
ORANGE，MOCK．Sce
fhiladelphus（ $p$ ．29）．
OSMANTHUS．
Aguifolie：in－．each 16
—ovahifolius ，， 16
— variegatus＂， 16

## Fardy Shrubs.



Hardy Shrubs.

RHUS-continued.
plants, with elegantly cut leaves.
OSbekil - - each 20
Toxicodendron
per doz. $12 \circ$
typhina (Stag's-horn
Sumach),
per doz. 6s. to 125 . and is $\circ$ vernix - - each I 6 RIBES.
albidum - . per doz. 6 o
aureum - per doz. 6 ○ each 10
CONSPICUUM - „ I o
SANGUINEUM (Flower-
ing Currant), per doz. $6 \circ$ each I O

- Flore-pleno " i o ROSA.-Rose.
rubiginosa (Sweet
Briar), strong per 100 Ios. to 16 o
SAMBUCUS.-Elder.
nigra aurea - per doz. i2 $\circ$
The leaves of this
variety are of a rich deep golden hue throughout the' season, which makes it very effective amongst other shrubs.
- argenteo-variegata per doz. $12 \circ$
- aureo-variegata per doz. $12 \circ$
racemosa (Scarlet Elder) per doz. 6 -
SANTOLINA.
Chailecyparissus (Lavender Cotton) per doz. $6 \circ$ SENNA, BLADDER.

Sce Colutea ( $p$. 23 ).
sKIMMIA.
japonica, strong
per doz. 12s. to 18
s. d. SKIMMIA-continucd. s. d.
oblata per doz. i2s. to $18 \circ$

- larger each 2s. 6d. to 36

SNOWBERRY. See Sym-
phoricarpos ( $p .30$ ).
SNOWDROP TREE.
Sce Halesin ( $p \cdot 25$ ).
SNOW FLOWER. Sce
Chionanthus ( $p, 23$ ).
SPARTIUM.
junceun (Spanish Broom),
per doz. 6s., per $10030 \circ$
SPIRÆA.
ariefolia - per doz. 6 o each I o
Callosa - per doz. 6 o each 1 o
prunifolia flore-
rleno - - per doz. 60
many other sorts
per doz. $6 \circ$
STUARTIA.
Malachodendron (pen-
tagynia) - each 36
virginica - - " 36
SUMACH. Sec Rhus
( $\mathrm{p}, 29$ ).
SWEET BRIAR.
Strong-
per ioo, 10s. 6d. to $16 \quad \circ$
SYMPHORICARPOS.
racenosus (Snowberry) per doz. $4 \circ$
OTHER SORTS ", 4 ○
SYRINGA.--Lilac.
EMIODI - - each i o
JOSIKEA - - " I ○ persica (Persian Lilac), 2 to 3 ft . high, bushy per doz. 6s. to 12s.; per 100, 405. to 750
rothonagensis (Siber-
ian Lilac), 2,3 , to 4 ft .
high, bushy, per doz.
6s., 95., and I8s.; per 100, 405 . to 100

## Hirdy Shrubs．

SYRINGA－continued． vulgaris（Common

Purple Lilac），per doz．65．，9s．and 125．； per 100， 40 s．to $75 \circ$
－alba（Common
White lilac），per doz．
6s．，9s．anid 12s．； per 100，40s．to $75 \circ$
－charles x．per doz． 120
— Dk．Lindley＂， 120
The following are
a selection of new Lilacs，which are well worth cultivating：－ ALBA GRANDIFLORA， very fine－－each ； 6 Ambroise vers－ Chaffelt
blanc virginal
いた。NOBLE
flore－plevo
Gullath
GLOIRE DE MOU－ Livs
INSIGNIS RUHKA
IAvANENSIS
nigricans
oblata
ville de troyes
TAMARIX．－TAMARISh．
J．Aponica－－per doz．\＆ 0 germanila
per doz．65．，per 100， $21 \quad 0$ －tetrandra pur－

$$
\text { PUREA - per doh }+0
$$

ULEX．－FURZE．
eUropatis ilore－plenu，
s． d．ULEA－continued．$^{2}$ ． s．$d$. strong，in pots，per doz．6s．；
per 100,305 ．to 500
－IIISPANICA（Spanish
Furze），in pots，per doz． 6 o
－strictus（Irish
Furse），in pots per doz． $6 \circ$ VIBURNUM．

JAPONICCM－－each 26
macrocephalum ，， 16
Orulus（Gueldres Rose），
per doz．6s．to 90
pilcatum－each 16
Tinus（Lrurustinus）， $1 \frac{1}{3}$
ft．，and bushy
per doz．ns．and Iz 0
－larger
per doz．ISs．，30s．to 420
SEVERAL OTHER SORTS， per doz．6s．to 90
WEIGE1．A．
AMAMLIS－－each I 0
－VARIEGATA－， 10
hORTENSIS NIVEA, 10
$A$ fine pure white variety，very free－ flowering and beauti－ ful．
Lavallet－－each 16
ROSEA，per doz．9S．，＂， 10
－NANA VARIEGATA ， 10
OTIIER SORTS－each I o
YUCCA．－ADAM＇s
Needle．
filamentosa－cach i 6
GLORIOSA each 3 s．6d．to 76
RECLRVIFOLIA
each 25．6d．to 50

## HARDY CLIMBERS, WALL PLANTS, \&c.

Plants of Climbing or trailing habit are amongst the requisites of a well-furnished garden. They not only display beauties of their own, but they also serve in many cases to screen unsightly objects, or to cover the bare and exposed surfaces of walls and buildings.

AKEBIA. s. $d$. CELASTRUS. s. $d$.
QUINATA - - each I 6 SCANDENS - - $\%$ 1 AMPELOPSIS.
hederacea (Virginian Creeper), strong,
per doz. 6s. to 9s., each 1 o
-8 to 10 ft .
per doz. I2s. to 18 ○

- 10 to 12 ft ., very stout, in pots,
per doz. 245. to 300
JAPONICA - - each i 6
Veitchil (tricuspidata),
strong, per doz. 125 . to 18 o
The leaves of this variety turn bright red in autumn, and the whole plant has a peculiarly graceful and refined character.
ARISTOI,OCHIA.
Sipho - - each a 6
BERBERIS.-BERIBERRy.
Darwinil - - each i 0
STENOPHYLLA - , 16
BERBERIDOPSIS.
CORALLINA - - " 26
BIGNONIA.
RADICANS LUTEA " I 6
—major - - " I 6
Grand deciduous
woody climbing plants.
GRANDIFLORA PRECOX each 26
CEANOTHUS.
AZURELS - -
DIVARICATUS

CHIMONANTHUS.
fragrans - - each 16 CLEMA'IIS-(Virgin's Bower).
Flammula, strong, each I ○ The Sweet-scented
Clematis, fragrant as
a Hawthorn.

| FLORIDA - | each |  |
| :---: | :---: | :---: |
| -- FLORE-PLENO | " |  |
| -Sieboldi | ; |  |
| Fortunei | " |  |
| Gem |  |  |

Gloire de St. Julien
each 16
引Helena - - " I 6
Hendersonil - " I 6
Jackmannif
per doz. I 2s., each I 6
JEANNE D'ARC - each 26
John Gould Veitch ea. 26
Lady Bovill - each I 6
Lady Caroline Nevill
each 26
lanuginosa - per doz. 120
each 16

- CANDIDA - - " I 6
- Nivea - - ", I 6

LORD LONDESBOROUGH $\begin{array}{r}\text { each }=6\end{array}$
Lucie Lemoine - , 26
Miss Batemian - :, $\quad 6$
montana - ", I 6
Mrs. James Batemin
each $=6$
Otto Frcebel - " $=6$

Mardy Climbers, Eva.


The varieties of Clematis have now become so numerous, that we have made a selection of those which, from personal know ledge, we believe to be the most desirable for general cultivacion. The modern varieties have been wonlerfully improved not only as regards the size and colours of their flowers, but also in their hathit and continuity of blooming, so that they are really unrivalled amongst hardy flowering woody climbers. The summer and autumn-bloomers have an exceedingly goorl effect when planted to grow over masses of rootwork, but the earlier sorts are better adapteci for walls or corridors.

The spring blooning sorts should have the wood of the previous year's growth trained in for fluwering ; but in the case of the summer and autumn-blooning varieties, those of the Lanuginon type are the better for moderate annual pruning, while those of the Jackmanni type repuire to be cut back still more closely. All these latt erbeing successional bloomers, require to be liberally manured.
 and Lunurginusa.
We can also supply any varicties in the trade not enumeratel above, at the current prices.


Hardy Climbers, Eve.

| HEDERA- continued. | s. | $d$. |
| ---: | :--- | :--- |
| colchica (Regneriana), |  |  |
| per doz, I2 | 0 |  |
| each I | 6 |  |

Helix chrysocarpa
(Yellow-fruited Ivy),
per doz. $12 \quad \circ$ each I 6
-palmata - " 16

- Sllver striped " 16 rhomirea variegata ,, 16 OTHER SORTS - per doz. $12 \circ$ each I 6
JASMINUM.-Jasmine.
Chrysanthenum - each i o FRUTICANS - ,, I o
nUdiflorum - , i o
officinale (White Jasmine), - each 1 o
REVOLUTUM - „ 1 ○
Wallichianua (pubigerum) - - each I ○
LONICERA.-Honey-
suckle.
BRACHYPODA - " I o
-aureo-reticulata,, i o
FLEXUOSA - - " I 0
FLORIBUNDA - " I 6
fragrantissima " I 6
grata (Evergreen Honeysuckle) - per doz. 9 ○ each I o
Magnevillea - " I 6
Periclymenum belci-
cUn (late Dutch
Honeysuckle), per doz. 6 o
sempervirens
- New Scarlet TrumPET, - each I o
- flava (Yellow-Trumpet Honeysuckle) each I 6
LIGUSTRUM.
japonicum (Japan Privet), - per doz. $12 \circ$ each I 6
s. d.
grandiflora
each 3s. 6d. to $7 \quad 6$
- exoniensis (Exmouth Magnolia), each 3 s. 6 d. to $7 \quad 6$
- ferruginea
each 3s. 6d. to $7 \quad 6$
MENISPERMUM.-
Moon-seed.
Canadense - each I o
PASSIFLORA.-Passion
Flower.
cqerulea - each I 6
Nematanni - " I 6
PERIPLOCA.
GRECA - - " I O
Pyrus.-Japan Quince.
japonica - " 10
—rosea - " 16
—alba . - $\quad 1 \quad 0$
- flore-pleno „ I 6

ROSA.--Rose.
Banksie (White Banks'
Rose) - per doz. $12 \circ$ each I 6

- lutea (Yellow Banks'

Rose) - per doz. Iz each I 6
Fortuniana (Fortune's
Yellow Rose) - each I 6
Gloire de Dijon " I 6
Cloth of gold ", 16
Marechal Niel " I 6
The finest yellow
Rose in cultivation.
Climbing Devoniensis each I 6
Sempervirens and Ayrshire, of sorts per doz. 6s. and $12 \circ$ RUBUS:-Bramble.
fruticosus bellidiflorus - per doz. $12 \circ$

- flore-albo-pleno
per doz. 120

Hardy Climbers, suc.


## LILIUMS.

Litium aurutum. - This fine plant is rarely; perhaps, seen to greater advantage, or more effectively placed, than when planted amongst Rhudodendrons. It does not appear to be generally known that this lily is, in every sense of the words, a PERFECTIY HARDY 13ulis. We have had it planted in our American ground for years, and never saw it injured by the winter.

We supply good sound biooming tuhts at iSs., 305., 42s., 60s., and 120s. fer dis.
esi These Bulbs have been grown from Seeds and Scales in our own Nursery, and are immensely to be preferred to the imported bulbs, which generally prove unsatisfactory:

Lilium alratum, s. $d$. per doz ISs., 30s., 425. , and $60 \quad 0$ These have been raised from scales or from seeds in this nursery, and are, of course, much to be preferred to imported bulbs. We believe this Lily to be as hardy as a Snowdrop.

LILIUM SPECIOSUM, s. $\pi$. per doz. 425. to 600

This is the true L . speciosum, and by far the handsomest form of that species.

- ALELM - per doz. 120
——RUBRUM $\quad$, 120


## HARDY HERBACEOUS PLANTS.

We add below a few really good things, which should find a place in every garden where there is space to introduce them.

Anemone Honorine s. d. Lily of the Valley, s. d.
Jubert - - each I 6 strong flowering roots
Arundo conspicua
per doz. 12S. to $18 \circ$
Cyprepedium spectablle
each 26
Delphinium Barlowi (true), - per doz. 120

- Belladonna, per doz. 12 o
- grandiflorum, - each i 6
- Keteleerit, - " I 6
- Madame Richlet " i o
- magnificum, per doz. 6 o These are some of the
finest herbaceous plants known.
Dielytra spectabilis
per doz. $6 \quad \circ$
Dodecatheon Meadia ci-
Ganteum, - per doz. 6 o
Fraxinella, Red " $6 \circ$
- White - " 6 。

Gentiana acaulis ", 60
Gladiolus brenchleyensis, strong blooming bulbs - per 10020 -

The finest of all the Cladioli for masses.
Gynerium argenteum
(Pampas Grass), strong
each I 6
-variegatum - per doz. 30 ○
Helleborus niger ", 120

- olmmpicus - " 120

Hepatica angutosa " 120

- Double Red ", 90
-OTHER SORTS ", 9 ○।
- Variegated - ", 120

Litilospermum prostra-
tum, strong - per doz. $12 \circ$
Osmunda regalis, very
strong plants
per doz. i8s. to $84 \quad \circ$
Peonta, varietics of officinalis, anemoniflora, Humei, Potsit, and 7 or 8 other kinds, strong flowering roots ea. $1 \circ$ per doz. 9s.; per 100, 63 ○
Primrose, Double White, per doz. 6 -

- Double Yellow, strong
roots, - per doz. 6 o - other sorts ", 6

Spigelia Marylandica
per doz. 18 -
Spiriea Aruncus, - each i o per doz. 9 ○

- japonica - each i o per doz. 6 o
- palmata - each I 6
- venusta - - , $\quad$ o per doz. 9 ○
Trilium grandiflorua
each I 6
Tritoma Uvaria, per doz. $6 \circ$
Violets, of Sorts " 4 ○
Yucca gloriosa each 3s. 6d. to 76
- Recurvifolia each 2S. 6 d. to 76
- filamentosa - each I 6


## REVISED LIST OF PRICES

FOR

## anmurame CuThe enis.



In these Nurscrics 50 acres are devoted exclusively!, to the cultivation of Fruit Trees; 50 acres to Conifers and other Evergreens; 12 acres to Rose Treas; and a proportionally large space to each other division of Useful or Ornamental Shrubs, Forest Trees, \&.c., requipping 32 miles of walks for the convenience of attending to the Stock, and $2 \frac{1}{2}$ acres of glass to rear the young plants.

##  <br> REVISED LIST OF PRICES FOR 1875,

## FROM THE LAST EDITION OF RICHARD SMITH'S DESCRIPTIVE CATALOGUE OF THE FIR TRIBE, WHICH MAY BE HAD ON APPLICATION, PEICE SIXPENCE.

 gVBRY UTIER BFAZUN, AND GUOWN HLNGLX TU MAKR HANDSOMF SIECIMENS.

When ore plant only is takers where quutations are given for the $d$ zen, wt will be charged at a 1hightly higher rate; and when takten by the doen in intances where griced singly, a proportionate redisetion will be made.

NOTE.-The figures in the first col umn denete the page in the Descriptive List of the Fir Tribe.




NOTE. - The figures ln the urst column demote the page in the Doscriptive List of tho Fir Tribe.


NOTE. - The figt res in tho first column denote the page in the Descriptive List of the Fir Tribe.


NOTE. - Ih figuan if the frst columa donote the page in the Deser litive List of the Fir Tribo.


NOTE.-The figures in the first column denote the page in the Desciptiro List of the Fir Tribe.


TAXUS-
Each, 1)oz. s. d. s. d.
baccata crecta au. var., $2 \frac{1}{2}$ to $3 \mathrm{ft} .5 /-7 / 6$ -"- - $"$ - extra sizal bushy

mens ......... 210
-"- -"- solden - striped, worked on common and Crisli
Yews, standards, varying in price from . . . . . . . . . 10, 6 to 1 -"--"- awear varicgata, —"一 一"- ——— ..9, 12 in. —"- partim-aurea.. 6 ", 9 in. —"- - 1 - ........ 1, lift. $\frac{2}{3}$





30
$010 \quad 0$
16
6
6
26
$\begin{array}{ll}2 & 6 \\ 1 & 6\end{array}$
40
76
16
20
$\begin{array}{ll}2 & 0 \\ 2 & 6\end{array}$
_"- pendula ............... 12,12 ,15 in. 2
-"- pulcherrina :turea, new,
1 to 6in., 76 to

2
$9 \quad 0$

NOTE. - The figures in tho first column denote the pago in the Doscriptive List of the Fir Trike.


# DESCRIPTIVE PRICED CATALOGUES 

OF THE FOLLOWLNO


THE FIR TRIBE SUITABLE FOR THE CLIMATE OF THE UNITED KINGDOM, giving their popular and scientifie names und derivations, their habitats, and the sizos they attain there; with deseriptions of their forms, growths, foliage, uses in the arts, soils and situations adapted for their culture, \&c.; also a copious iudex of synonyms, and quotations of sizoz and prices. Frce by post for Six Stamps.

FRUIT LIST, containing illustrations of trces trained in the inost approved fashions; remarks as to soils, manures, and drainago; directions for lifting, planting, branch and root pruning, cropring, and the cultivation and management gencrally of Fruit Trees, both in the open ground and under glass ; deseriptions also of their growths and other peculiarities, and of tho forms, colours, and sizes of their fruits, their textures, flavours, seasons, and their durations, uses, \&c., with an enumeration of their many synonyms, and a list of prices for trained and untrained I'rces.
GARDEN SEED CATALOGUE, including a calendar of operations for each senson, and quotations of prices for complete collections of Secds for Gardens of various sizes, as well as tho usual tariff; hiuts as to manures, soils, \&ce. ; remarks also on the qualitics, uses, heights, de., of various vegetables, and on various modes of culture, cropping, storing, \&e.
BEDDING PLANTS, comprising tho most desirable varietics available for tho Terrace Parterro, for the tropical and ordinary Flower Garden, for tho inixed border, and for grouping en masse with shrubs or on the lawn.
ROSES, containing all tho best of the new and old varieties, arranged in their several sections, and fully described as to their shapes, colours, and adaptations; with amplo instruetions also as to their treatment, and quotations of prices.
AGRICULTURAL SEED LIST, including, in addition to the ordinary deseriptions and priced quotations of Farm Sceds, a description of the most valuablo of the Natcral Grasses for forago purposes, their names and derivations, produce, periods of infloresence, especial uses, and the soils and situations for which adapted, cultural requircments, prices, \&e.
DUTCH BULBS, and other flower roots, giving a full deseription of tho colours, forms, and other peculiarities of each sort, tines of planting, and soils suitablo, \&ce., prices and other information.
EVERGREEN AND DECIDUOUS TREES AND SHRUBS, containing soloctions of tho finest Rhododendrons, Hollies, and other Evergreens; Evergreen and Deciduous Ornamental Trees for Parks, Avenues, \&e.; Deciduous and Evergreen Bushes or Shrubs, Climbers, Trailers, \&c. ; their gencrie, specific, and English names, native countries, hoights, times of flowering, and especial adaptations; sizes, priees, \&ec.
GREENHOUSE PLANTS, comprising the best selections of Camellias, Azaleas, Ericas, Epacris, Fuchsias, Geraniums, \&e., \&e,
HERBAGEOUS AND ALPINE PLANTS, HARDY FERNS, \&c, with deseriptions of colour, height, time of flowering, \&e.
1875.

Select Coatalonue of

## CONIFERE

 ANV OTHEK
## ORNAMENTAL PLANTS,

 ROSES, RHODODENDRONS, FRUIT TREES, ETC., OFFERED FOK SALE IV
## WILLIAM BARRON \& SON,

LANDSCAPE GARDENERS AND NURSERYMEN.

> ELVASTON NURSERIES, BORROWASH, NEAR DERBY.

The Nurseries are within three minutes walk of the Borrowall Station, on the Midland (Uerhy and Nottingham) Kailway. P.O. ORDERS MADE PAYABLE AT DERBY.

SEED WHREHOTSE—16, MARKET STREFT, NOTTINCHAM.

[^10]
## INTRODUCTION

Is submitling this Catalogue to the readers of the foregoing work. William Barron and Son beg to state that they have sinco the ostablislument of their nurseries moro than twenty years' acro, mado Conifere a speciality, every Now llant introdnecd into this country dnring that timo having beon purohased by them the moment it was in the market.

They havo likowiso agents in many places abroad, from whom they receivo consignments of sced of such varioties us are best re-produced from seed.

By these means, and by the very careful attontion bestowed in the enltivation of their plants, their stock of Couiferas has become celebrated both at home and abroad as being perhaps the best in tho traule.

Tho superiorits of their plimts is sufficiently established by tho faet that, during tho last six years, W. 13. and Son havo constantly oxlihited at all the prineipal shows in tho United Kingdon, and have as yct invariably oltained first honours.

They would also particnlarly call attention to their splendid collection of Ornamental Deciduous Trees; of many of theso they caunot speak ton lighly, it is impossible to over-estimato their valuo in Landseape Gardeuing. During the last fer jears special attention has heen devoted to this branch, and, as it has beeu their personal study to seck out and secure tho nowest aud best rarietics, they can with confidence recommond all that they offer.

As great mistakes aro mado in the treatment of trees after removal, a fow practieal hints will be furnished to parehascrs of large specimens, to insure success.

The General Nursery Stock is oxtensive and well-grown, and as they pay partieular attention to tho constant remoral of their plants, they arc fiuely rootod, and cannot fail to give satisfnetion.

When packed, tho balls of the larger plants are eompletely enelosed iu a cirenlar erate, which is drawn tightly mund them ; in this manner a plant will travel, with a ball several ewt., hmndreds of niles without the slightest injury, and will bo delivered at its journey's oud in as perfect a conditiou as when removed.

A general descriptive Cataloguo will be forwarded, post freo, on application; likerwiso their Seed, Bulb, and Rose Catalognes, tho two former published in Jauunry and tho latter in August.

Landscape Gardening-Mr. Bamros, Sen., who has had great cxpericneo in this dopartment, devotes nearly the whole of his timo to his profersion as a Landscape Gardcuer. He also gives advice on the management of Woods and Forests.

Iu addition to furnishing plans, they also undertake all kinds of ground work, the formation of new roads, ormamentnl water, rockwork, \&e., by contract or otherwise.

They foep a staff of expericnecd foremen to snperintend any work that may be entrusted to their care.

Any Plants not enumeraterl in their Catalogne, Grecnhonsc, Stove, or otherwise, which their customers may roqnirc, if not in stock, they will bo happy to procure at the nsnal prices.

It frequently happens that after trcos have been planted a fcw years, they appear to havo benn planted too near or in the wrong place, and their possessors would gladly have them placed to greater advantage if they kuew it conld be dono with snfety. Their Transphanting Machincs, with effivient inen for such pnrposes, ean be had at a molerate rate. Widias Raron being tho originator of the most successful system for the romoval of largo trees, his well-known reputation as a planter, may give confideuco to tho inexperieneod. A few testimonials, selected from many others, received from gentlemen who havo used their Machines, will be found at the ond of the Cataloguc.

Althongh every earo will be taken in the packing of goods, risk of every deseription, costs of transit. \&e., must be borne by the purehascr. No eomplaint entertnined unless made within seven days of the reccipt of goods.

To lessen transit expenses, all goods will be consignod at "Owner's Risk" (viz., Purchaser's) unless advised to the contrary.

Elvaston Nerspairs, December, 1874.

## Willam Barron \& Sons Catalogur.

## CONIFER压。

Nine und rare plants are printed in black letter.

Each.
s. d. в. d.

ABIES raprure -


Chandeais (Hemhluck
rimen,


Coblitea - ...jurdos. 60 ... 94

1) ithLa=1\%


1 virute? raten 1 hy nursolves
for whrth we bave ahtained several arst-cluss crithestes. There le wees are shertcr anm! ulure obtuas thas the tyee: very dark green, snt tet an all rethid the at $m$ after the stylo of lificea риларек.

## 

| c |  |
| :---: | :---: |
|  |  |

A vers slaurous and be uitful var cty of the akove obtainal a flrst-eles certificate at the Lional lloricultural soricty s



Each.
8. d. s. d.

## ABIES (viruce)



2 year hedded . per 100 I5 0
8 to 1 it. ........jer doz. Is 0

\& RIND. - .......................... 1 !
Nitra,
12 to 1. iu. ..... ...per $1(4) 2000$

1. to : If. ..... ... prer doz. 50
pumsla ... .. .-............. o 11
Ti e or inal disnt of this
varicisy is $7: 2$ it through, atal
n t 2 a re thath of fijgh.


## S.tchensis

12 to Jo in. ... per doz. 180
Tsuga Sicboldif (J ipan
Hemberk siprucen 1 ft. 6 im .
t. $3 \mathrm{ft} \ldots$..... per dos. 10 of ... 316
 its f ft . $\quad 10 \mathrm{f} ; \quad 21 \mathrm{l}$

ARAUCARIA



I Teanalful godets rariety of
the Aratteatis, ralse 1 liy Mr
Fowler, C'able kennely abous
2n) years amo, the original lan:
being now 22 ft . 1 ixh, and thely
varimgatelall nuer the tace


## CHAMAECYPARIS (The

White Cedar.-


CRYPTOMERIA (The Jipan
Cclar)-
mLEGAN:


CUPRESSUS (The Cypress)-

| Comsrysa | 26 |  |  |
| :---: | :---: | :---: | :---: |
| FUNEBHAS, 1 Sin. to 2 ftGovisilia, |  |  |  |
|  |  |  |  |
| 18 n . to \%ift. .....per doz. |  |  |  |
| Latiblatiana, 2 to $2 \frac{1}{2} \mathrm{ft}$. |  | 6 |  |
| ulba variegata |  | 6 |  |

Lawsonilns,
12 to 18in. .........per doz. 2 of per 100176
18in. to 2ft. . ... prer doz. 50 per 1010 :30 11


Perfectly new and dictinct, the brightest of any of the white tipped varicties.

| ba vabiegata | 16 |
| :---: | :---: |
| Abgicntea, 12 to 1 Sin. | $16 . . .2$ |
| lareer | $36 \ldots 10$ |
| aumea variegata | 10 |
| EHECTA VIRIDIS | 6 |
| ACLILS | 10 |
|  |  |

A lovely golden compact-growing variety of C: Lawsoni ma. It reatins its golden huo throughout the year. We have thoronghly tested its power of endurlug sun heat, and can recommend it as one of tho hardiest and richest of coloured Conifers.

## Each.

s. d. s. d.

CUPRESSUS (The Cypress)
IAW:ONITANA


JUNIPERUS (The Ju iper)-


SUIM1ANA.


SEHOR1.1く A . ............ 2 6


1- +t :2ft. . 12 U
T1 a 11.111 i, !1). 180


TH IFFE \&,
ㄹ.


VIVIINAANA, 3 10 iff.... $10 \ldots 1$ is \& to jft. . ..... thiE + + VALIEGITI

(1.1) (1, 2 \&) 3ft.

4; , oft.
$81 . x$ \& 1,12 to $1>171$.
LARIX TTVE Jans

 210

LIBOCEDRUS (The I, en=1 tir



PIC A (Th Litrerfir)

 coserid by if f: fil, wish lor haves a.d very slameous fline: औ1\} rently a briy letwien $p$. no bis is na and I' larmei. ( 1 \& of the रूt to mot ll iti us intrmbu alfor mary $!$ ra


PINUS－（The Pinc．）
strolis，
tabulæformls
A very pretty dwarf varilty， growing not more then whe or two feet hith，but of ha dena gyreading tread of a that tabular form
sslverima（ee Foret tre．．
aurea
A luayf．growi＝k variey of the＝necll l＇ir．wis h turns to a lrillient gelow in winter．

l－reer．．．．．．．．．．．．．

Tt HEACLILISA。
Lit． $6 \mathrm{in} . \mathrm{t}$, ifu．．．． 3 fi 51$)$

## PODOCARPUS（The long－

stalhal Yew．


RETINOSPORA（The Ja in
C＇ypres）－


II youns shoots of this plant are cquitu white when the？tirst hreak ont，and th y rimain so
for about three muntls，whan thry becume resen，very distinct．

$50 \ldots 76$
50.7 is
$36 \ldots 0$ 1

PODOCARPUS（The long

PRUMNOPITYSITheciegnt
Ilum Fruital Pi＝．）


E．ach．
s．d．s．d．

SALISBURIA－

admantiforita

11

$\cong 0$

## SCIADOPITYS

V ktchlati，（The でm
birella 1 Net
$96 . .13$

## TAXODIUM－DISTICHUM



abas spica ．．．．．．．．．．．．fo 11 ．．． 210
The winl flant jocfa bluth tint．ex＋T 1a2 the jr int of the I ists，whirh itic of a pal： jellow，very distizct．

TAXUS The 1e：－
ADPRESE 1,8 to 1ft．．．．．．．．．．．．． $50 \ldots 106$
4 to 5 ft．．．．．．．．．．．．．．．．1J ¢ ．．．15 10

Perfect Blints trained in the form of I＇yra：ids．
stricta
10

Each
s. d. s. d.

TAXUS-(The Yerr.)
baccata (common yew),
9 to $1 \because i 11 \ldots \ldots . . . . . . . . . . . . . e r ~ 100180$
12 to 1 Sin............. , , 300
18in. to 2 ft ...........per doz. $\begin{array}{r}6 \\ \text { per } \\ \text { per } \\ \text { 100 }\end{array}$
3 to 4 ft . ........................ 16 ... 26
larger ...............

largor ......................... ${ }^{3} 0$... 630
Elvastonensis aurea... 5 0 ... 210
This most remarkable and disthet varicty origiuatednt Elvaston Castle. It is a bright orange colour, and malike all other Golden or Silver Yews, is not variegated but a self enlour ; it is by far the most brilliant of any in the winter.

| fastigiata, 2 ft., ...per doz. 90 |  |
| :---: | :---: |
| larger.... | 36 ... 106 |
| variegata, |  |
| 6 to 9in. ......per do |  |
| 18in. to 2 ft . | 50 ... 76 |
| aurea (Standish's). | 50 ... 76 |
| Foxil ..............per doz. | 90 |
| fructu lute. | 0 |
| glatca (Blue John) | 0 |
| cracilis | 6 |
| Hodgtomis | 0 ... 16 |
| Nidpathen | $10 \ldots 36$ |
| Mitchelilan. | 16 ... 26 |
| Pybaimalits. | $10 \ldots 26$ |
| variegata | 16 ... 26 |
| varilgata aurea (old gold striped.) |  |
|  |  |
| 9 to 12in..........per doz. |  |
| 12 to 18in. | 240 |
| 2 ft . Gin. to 3ft. 6 in | $7{ }^{6} \ldots 106$ |
| 4 ft . | 150 ... 210 |
|  | 250 ... 1050 |

The magleal etfeet prorluced by this lovely plant in landse:tpy gardening must be scen to be understood.

We have the largest stoek of specimen plants in existence, all tralned as lyramids: they vary in priee aceording to shbstance.

## Barroni femina.

A seedling, raised by ourselves from the old golden yew, but is much freer in crowthand brighter in eolonr. It is very symmetrieal in labit. Our original plant. now about 5ft. high, is upwarels of rft . in diameter at the base, and forms a perfect pyramid. The fact of its being a female plant greatly enluances its value, as all the plants of Taxus baceata varlegat: aurea, or golden yew, with

TAXUS-(The Yeve.)
the exception of the tree from whiel this was raised, are inale plants. It has obt ined ifrstelass Certificates and I'rizes at every show at which it has been exhibited.

| baccata Washingtoni ..... 10 |  |
| :---: | :---: |
| Casadevsis ................... 1 | 10 |
| vapiecata aurea |  |
| cuspidata |  |
| Dovastusil, with leaders... $50 \ldots 150$ |  |
| standards, with very finehonds .............per pair 1050 |  |
|  |  |
| UREA |  |
| leaders ................... 10 | 06 ... 210 |

THUJA (The arlor-vita)-
aurea (sce Biota)
AbPLENifolia .................. 50
Caucasta (see Siberiea)
Durkingensis ..................
$26 \ldots 36$
ericones (Ellwangeriana) per doz. 120
falcita (sec Biota fuleatu)
gigantea (see Libuedrus decurrens)
Menziesi, or Lobbi,
18in. to 2ft., ...... per doz. 50 , 100350
3 to 4 ft ............ per do\%. 150

larger ............................... 3 6 ... 106
Naxa ............................. 26 ... 36
occidentalis,
3 to 4 ft . ... ........ per 100 to 0
4 to 6 ft ..............per doz. 90
,, 100600
alba spica .................. 10 6
plicata ... ....................... 16
per doz. 180
pempula .................... 16 ... 26
This is scaree and tery
beautiful.
rugmat ............ ............ 26 .. 36
pyramidilis,
3 to 4 ft., ............ per 10040 n
4 to 5 ft ., ........ ...per doz. 90
" $100 \mathrm{G}^{9}{ }^{\circ} 1$
Stbertc.a,
2 to 3 ft., . ........per doz. 6 n 100
larger ........... ............... 10 ... 16
Staudards, 5 to $6 \mathrm{ft} . . . . . . . . \quad 26$
Vervicneami, 2ft. Gin. to 3 ft . 36 ... is 9

## THUJOPSIS (The broad

leaved Arborviter)-


## Each.

s. d. s. d.

THUNOPSIS-(The brocul leaved
Arborritio.)
Bobl-sta Decr-mbens
(heights and prices as aliove)
variegata,
9 (1) 12 in..........per doz. 15 o)
1:2 to 15in....... , 210
Inrger ....................... 50 ... 1050 LATEVIRFNS,
6 tu 9 n. ......... per doz. 120
§七12in. ...................... 26
STavDismis

TORREYA (The Ficted Yeus)

| R.antis | $88 \ldots 10$ |
| :---: | :---: |
| MYRISTICA |  |
| vichama | $2 \mathrm{f}_{5} \ldots$ |
| taxifulla | 50 |

Each.
s. d. $s$ il

## WELLINGTONIA

 GIGANTEA-1 yeariu single pots, per 100300
2 years , , , 500 is totiv. .............per doz. 90
3 to 4 ft. ........................... 3 6... 50
4 to bit. ............................ 50 ... 76
per doz. 720
larger.......................... $106 \ldots 316$
Variegata .. ..................... 30 ... 420
alba spica ..................... 210 ... 316
favescens .................. 210 ... 316

WIDDRINGTONIA -
Cepresbolder Glauta . ... 10 . 16

## DECIDUOUS ORNAMENTAL \& FLOWERLNG TREES AND SHRUBS.



Fach.
s.
d. ก. d

## ACER-Mraple.



AESCULUS(In.use Cheitnut)

| Hepriciativem discolora-. $10 .$. |  |  |
| :---: | :---: | :---: |
| Floge piemo | 10 | 46 |
| lacinista | 16 |  |
| \#1 4R! | 10 | 1 19 |
| largar | (2) |  |
| Jipusica | 26 | 36 |
|  | 26 |  |
|  | 10 |  |
| WimTT.3 \II | 1 | 16 |
| Fold mitaivar | 1 |  |
| Spl:extmilic | 1 | 16 |
| l'avil (smonthjruited Horse Clucstmit) |  |  |
| areit ta | 10 |  |
| Cilforniea | 10 |  |



Each．
s．d．B．d．
CORYLUS－
aveliline pol．plrpurea （1＇arple Fillerl），
adrat．．．．．．．．．．．．．．．．．．．．．．．． 76
CRABOWSKIA
bemanampolis ．．per doz． 180
CRATEEGUS（Hawthurn）－

| OXYOCANTMA ALAA FLORE－ | 1 | 0 |  |  |
| :---: | :---: | :---: | :---: | :---: |
| coccines（scarlut） |  |  |  |  |
| PLVHEG FINHE PLBNO （Paul＇s dutile rrmson） |  | 6 |  | 2 |
| ROEEI FLORR PLENO（do－ 6 Le pink） $\qquad$ |  | 0 |  | 1 |
| Horrida |  | 6 |  |  |
| biltififolia | 2 | 6 |  |  |
| Pendela | 2 | 6 |  |  |
| marbivtila | 2 | 6 |  |  |
| （＇misilva | 2 | 6 |  |  |
| IOPITIMOLIS |  | 6 |  |  |
| 15 named varieties． | 1 | 6 |  | 2 |

CYDONIA（Japonica） per duz． 40

CYTISUS


DAPHNE－
MFZERELY ALba ．．per doz．if 0 ．．． 120 ATHOPUKHUREA ！$\quad . \quad 00.120$

## DEUTZIA－

（hFsita pl．pleno，


Each．
s．d．s．d．
FAGUS（Beech）－

（F＇ern leaced）．．．．．．．．．．．．．．． 16
ATBOPURPUREA（new dark

cantile
сСР\＆に ．．．．．．．．．．．．．．．．．．．．．．．． 16
HFRMGINEt LATEFOLIA．．． 16
heteb phyliaf．．．．．．．．．．．．．．．． $16 \ldots 2$ ．．． 2
MACROPHILLA ．．．．．．．．．．．．．．． 16 ．．． 26
ぶでる」 ．．．．．．．．．．．．．．．．．．．．．．．． 1 6．．． 26
revoula，standards ．．．．． $26 \ldots$ 5 4
pepveea（Purple Beech），
15 m ．to 2ft．bin．perdoz． 40
per 10090 i
2ft．Gin．to 3 ft Gilt．，
per doz． 80 per l（x） 500
3ft．Gin．to \＆ft．．．．．．．．． 10 ． 16
larger ．．．．．．．．．．．．．．．．．．．．． 26 ．．． 50
Pr $\triangle$ DLla ．．．．．．．．．．．． 50
『ARIEGATA．．．．．．．．．．．．．．． $26 \ldots 30$

## FORSYTHIA

st spensa ．．．．．．per doz． $90 \ldots 120$ viblifgivi．．．．．．．．．．， 9 ．．．． 120
fol．variogata．．．．．．．．． 86

## FRAXINUS－




## CUPRESSUS LAWSONIANA ELEGANTISSIMA．

Tht finnst lidhen（：mifer in existemer．Not only the filiate but the at im is a mist brilliant follow，aud mulike menst grollen filligent plants．it is the bughtest in the wimter．

It is as gre it an inmprovenent on（．Lats mians lutea（or ambet，us that phant is whay other Golden comifer．

It is a free frower，am！as we have th romphly tested ils ＂appabihties of enduring situ heat and frost，we＂＇m with the
 at＂plis tinns intrextuce lf ir many years．

It will be sent out in Aurnst，1875．

$$
\begin{aligned}
& \text { シnl .. ..... .. . .. .......... 31ヶ. Ch. „ }
\end{aligned}
$$



## RETINOSPORA TETRAGONA AUREA．


 the litimesporis．

If is of sthw an！esmenel erowth，anl forms $\Omega$ dense amb
 ate arranged tetrigutlly in form ：wh on tho brachletz．



As a miniture law tree，ur for evergren bedding pur－ phate，it will lae most invaluable．

I．will be sent ont in initumn，I8if．

$$
\begin{aligned}
& \text { Price-1st size ....................... 12s. 0d. each. } \\
& \text { 2nd }, \ldots . . . . . . . . . . . . . . . . . . . . . \text { 3is. Grt. , } \\
& \text { 1) } 5 \text { plithts for } 126 \mathrm{~s} \text {. }
\end{aligned}
$$

- 




|  | Each． |  |
| :---: | :---: | :---: |
| SPIREA |  | 5 |
| Doticisit | 40 | 60 |
| （oxocordia）grandiflora | 108 |  |
| J．APIIG（HUTELA），stromb | 60 | 90 |
| Lindieyana ．．．．．．．．．．． | 0 |  |
| Opt Lifolsa metha | 10 |  |
| per doz． |  |  |
|  |  | 36 |
| Thut safmeia ．．．．．．．．per duz． |  |  |
| veversa | 1 | 16 |
| olmaria rabiegiat． |  |  |

Sinonderry）


## SYRINGA（Liluc）－

inforts … ．．．．．jer doz．fo i）．．． 120
fersi is staudards ．．．．．． 20

| TILIA |  |  |
| :---: | :---: | :---: |
| Ampricasa．．．perinz．at 0 120 |  |  |
| ARAEVTEA ．．．．．．．．．．．．． 1 fi． 50 |  |  |
| Fhathorm Nuva ．．．．．．． 168.26 |  |  |
| IF．NDt＇A STAvDARDS ．．．． 36 ． 511 |  |  |
| Ful．Vimlegiatis | 26 | 50 |
| dasystyia ．．．．．．．．．．．．．． 10 50 |  |  |
| This variuty retalns Its folizeo |  |  |
| for sonie week loner in the sutumn tban the commen ：its |  |  |
|  |  |  |
| laves are alsu s mu－h brighter |  |  |
|  |  |  |
| HETI ROPRYLIA | 10 | 50 |
| lat inidta | 16 | 50 |
| Maçuray $\quad 20$ |  |  |
|  | 16 | 26 |
| Matypuilita， |  |  |
| Lto 3ft．．．．ler $1(\mathrm{~h}) 200$ |  |  |
| it $t$ ¢f．．．．．， 410 |  |  |
| $7 \mathrm{t} 0 \times \mathrm{ft}$ ． 10.20 |  |  |
| S to luit．．$\quad \ldots 36$ |  |  |
| HRES（yolluw twigmol）， perdoz． | 40 | 180 |
| ntrras（rod twign il， |  |  |
| perdoz． | 90 | $181)$ |
| SPFMHES | 26 |  |
| CIMAPULA FOL．Vallifata | 26 |  |

## ULMUS－

| Adetheasa | 111 | 16 |
| :---: | :---: | :---: |
| 1ENDCLS stamiarda | 3 i | $\therefore 0$ |
| FOH．ACRIU SIHE：GTIS | 1 | 6 |
| ANTARETICA | 10 | 13 |
| CIMTKSTRIS UFRAI：DI | 1 f |  |
| statilaris | 26 |  |
| Viry hast rut leave 1 variety． scuni peudulnus habit |  |  |
| surea Rosscelsi，dwarfs |  | 6 |
| standaris |  | 3 n |

[^11]A gurgeous lawin tree ：retaing
its lecela grolion hue till oftumn

# ORNAMENTAL AND FLOWERING TREES AND SHRUBS. 

|  | Each. <br> s. d. s. d. |
| :---: | :---: |
| AREUTUS- |  |
| Audracuo | $16 \ldots 2$ |
| Cruomii | $16 \ldots 26$ |
| Millerii | $16 \ldots 26$ |
| Phontinifolia | $16 \ldots 26$ |
| procora | $16 \ldots 26$ |
| unedo, 3 to 12in. ...per doz. | $60 \ldots$ |
| 12 to 18in. ........ $\quad$, | $\begin{array}{lllllllll}9 & 0 & 12 & 0\end{array}$ |
| 2ft. Gin. to 3ft. Gin. ... | $26 \ldots 36$ |
| AUCUBA- |  |
| Japonien, 9 to 12in. per doz. |  |
| 15 to 18in......... , | 120 |
| larger | $16 \ldots 5$ |
| In order to facilitate the selec- |  |
|  |  |
| divice them into two classes, |  |
| the "male" and "female" |  |
| varicties; the green varieties in each being marked ", all the |  |
| others are varicgatul, some with |  |
| a fine blotch in the centre of the |  |
| leaf, as in A. bicolor, whilst in |  |
| others the varlegation is spotten, |  |
| or irregularly blotched. They ${ }_{\text {are all beautiful, and their value }}$ |  |
|  |  |
| as cood hardy ornamental plants |  |
| cannot be overrated. |  |
| MALE VARIETIES. |  |
| bicolor | $16 \ldots 76$ |
| longifolia* | $16 \ldots 50$ |
| maculata | $16 \ldots 50$ |
| marmorata | $16 \ldots 50$ |
| medio argontea | $16 \ldots 50$ |
| ovata* | $16 \ldots 50$ |
| viridis, or vera* | $16 \ldots 50$ |
| FEMALE VABIETIES. |  |
| angustifolia* | $10 \ldots 36$ |
| auroa | 50 |
|  |  |
|  |  |
|  |  |
| variegrata | $26 \ldots 50$ |
| maerophylla**............ $16 \ldots .50$ | $16 \ldots 50$ |
| maculata* .................. $16 \ldots$ ¢ 60 |  |
| ovata* ${ }^{\text {a }}$................... 16 ... 5 |  |
| viridlis, or vera |  |
|  |  |
| BAMBUSA- |  |
| Fortunoii varicgata, strong |  |
| per doz. | $60 \ldots 90$ |
| Motako .............. , |  |
| viridis striata .............. | 26 |

ARBUTUS-

## AUCUBA-

15 to 18 in
"
In order to facilitate the selection of the varions linds, we diviue them into two classes, varicties; the green varieties in each being marked ", all the others are varicgatud, some with a fine blotch in the centre of the leaf, as in A. bicolor, whilst in others the variegation is spotted, or irregularly blotched. They are all beautiful, and their value cannot be overrated.

## MALE VARIETIES.

BAMBUSA-

Each.
s. d. s. d.

## BERBERIS-

```
cencinna
Darwini, 12 to 1 Sin., trans-
planted ............per 100150
1sin. to 2 ft ......... , 200
2 ft. te 2 ft. 6 in. ...per doz. 40
per 100250
3 to 4 ft. .............per doz. 60
ompetrifolia .........per doz. \(60 \ldots 90\)
intormedia and Japonica
(sco Mahonia).
Newberti .................per doz. 180
sionophylla, 18 iu . to 2 ft . , \(60 \ldots 90\)
laver..................... ө \(30 \ldots 120\)
Wallichii, 12 to 15 in ., bushy per cloz. 4/-...per 100250
18in. to 2 ft ............per doz. 90
2 ft to \(2 \mathrm{ft} .6 \mathrm{in} . . . . . . . . . . . . .\).
Vulgaris fol aurca variegata 36
```


## 8ROOM (sce Spartium).

Buxus (Box)-
arborcscons, 1 Sin. to 2 ft . per doz. 3/-per 100150
2 to 2 ft . 6 in . , $5 /-\quad, \quad 300$
3 to 4 ft . .............per doz. $90 \ldots 120$
larger ......... ................. 16 ... 50
peudula varicgrata per doz. $90 \ldots 180$
argenter .............. $\quad, \quad 0 \quad \ldots 120$
aures .............................. $10 \ldots 10$
dwavi, for cdging, drl. per yd.
$\begin{array}{lllllll}\text { Havdwiek secdling'..per doz. } & 6 & 0 & \ldots & 9 & 0 \\ \text { Japonica aurea ........... } & 1 & 0 & \ldots & 5 & 0\end{array}$
latifolia nova ..................... 30
Nepaulensis ....................... 10
obcordata ...................... 1
pyrnomidalis.......................... 10 doz. $60 \ldots 90$
rotundifolia ......... $\quad$, 90 ... 120

CASTANEA-
Chinensis ........................ 16 ... 26
ehrysopliylla ...................... 150 ... 210
Ans evergrenn Chestnnt, very beautiful and scarce, with very sweet - seented flowers: the under-surface of the leaves is a golden yellow.




Fach.
s. d. s. d.

## Each

s. d. s. d.

## YUCCA -



## AMERICAN PLANTS.

RHODODENDRONS (HARDY VARIETIES).
The following prices represent plants from 1 foot to two foot high, larger plants day be had at ndvanced prices.
tos We have it fino stock of 1 year and 2 years' grafts, which wo can supply at $\therefore 710 \mathrm{~s}$ aud ${ }^{2} 10$ per 100 .

Aclandiamum, delicate blush................ 36
Adonis ........................................... 36
Alarm, ree $p$ erimson, whito centro...... 36
Alaric, clark purplo, shaded erimson 26 to 36
Alexandrina .............. ...................... 36
Arabelh, very large, white, ycllow
spots …..................................... 50
Archinedes, rosy erimson .................. 36
Atrosnhyuineum, deep erimson ......... 3 6
Azureum, distinct and beatiful ......... 26
Barclayanum, clear rosy crimson ...... 36
Beranger, whito ............................ 36
Bertlıa, blush .................................. इ 0
Blandyanum, deep erimson ............... 36
Blattomm, claret erimson ................... 36
Bompuet do Flore, light rove............... 3 if
Brayanum, br ght purplish erimson ... 36
TBromghtomi, fine lright rose............... 36
Brivens, rose, maguifieent truss......... If 0
Brutus, large, pale rose...................... 气 6
Bylsianum, hush, rose eflgo............... 36
Captivition, tino rosy erimson ........... 26
Catawhiense, rosy lilae
Chancellor, dark purplish lilac........... 26
Cinntmomum, C'nminghami............... 26
Columbus, pitle flesh .......................... 26
Collestinum, blush .............. ......... .. $36^{-}$
Contesse de Morello, clear roso ......... 50
Concessum, deep rose..... ................. 36
Currieanum, finu dak purple ............. 26
Cヶ21 …................ . ...................... 2 ©
Due do l3rabant, yellowish white........ 26
Duke of llalakoft, lhush .................. 36
Einsign, palo hlush ........................... 36
Erectum, rosy crimeon ..................... 36
Etendiad do Flandre, blush rose, with dark ejo.
Etna ...................
36

Everestianum, fringerl, violot colour
Expuisite, pure whito, largo hloteh..

Pastuosum flore pleno, rosy lilac Ereh.-s. 36
rastuosum fore pleno, rosy lilac......... 30
Ferruginenm.
Tireball, deep lake .................................... 50
Fleur do Marie, bright lake, white
contre... .................... ................. \& 6
Floribundum, lecp lake, compact truss 26
F'ornosum, pure white ...................... \& 6
Gandarense, growl rose ................................ is 6
(reneralissimo, luright lake ................ 3 if
(ieneral Cialrera, erimson spots .................. 6
(feneral Wilson, bright lake................ है 0

(Iloiro, white, reddish brown sputs ...... is 0
Grisewoorliamm, white, purplish
crimson spots ............................ 500
11:rlequin, riolet purple, whito centro 26
Hendersonii, dark purplish elaret. ...... 26
Henry Drummonl, urimsun searlet...... $\begin{aligned} & \text { B } 6 \\ & 6\end{aligned}$
Herscholl, rose ... ............................ 36
Hirsutum, dwarf, red
Hrgarth, rosy searlet.................................. 26
1 Iumholdti, deep roso............................... 3 is
laco, rosy (rinssom ......................... 36
Incomprarable, lright red ...... ........... is 6
Ingratnii, palo bhesh ........................... 3 6
Invincible, lemon-coloured sponts........... is $^{0} 0$
1 mperatrico, bright cerise roso .. ...... if 0
Isibel, licht rose, pate centro ........ ... 10 i
Jessiria, dirk eye, lavender grouml .... io in
Jolm Waterer, a most intenso erimson in 6
Juhar, light ronsy erimson ................... 36
Lamly Eleanor 'atheart, palo roso ...... 36
Lady Gorliva, fino white...................... 3 if
Leopird, rosy lilac ............................... 26
Leviathan, white, tingod with rir let ... 3 ti
1 imbatnm, pale bluslı ..................... 36
Lorl tlyde, dark erimson ...... ...... .. . 3 if
50 Lord Derby …................................ In is
50 Lircidum, purplish lilae ..................... 2 is
26 lacratia, peach colour .................... 50
is 6 Nactulosissimum, 1ale rose .. ............ 3 is


Fiach.-s. d.
Iabiarum, hripht rose ..... ...... .. .... is 0
I.ussellcanum, pale erimson . . .... . 50

Sic iller, kuish truytu ……............. 3 i)
Silney llarbert, crimson ...... .......... is is
Lir J. Marke, lark crimson ....... ..... 50
sir Joseph Whitworth, purplivh rose . 3 is
Sir Waiter S ot* $\mathrm{m}^{\text {wh }}$, pink and white is ti
Star of Eug nal, p. e jhakish white ... of !)
Ataudi-lis I' rfection, pate preach colunr of 6
Situlla, [al rese . ............ ...... . 3 ti
Ahutanz, r ry pale thu-h .............. is is
Murprise, li ht rose freitruss $\ldots \ldots . .$.
Tirpela, white, hrown =lxuts ............. 50
The lixel, the blu-h. Julow ….... 50
The - mi cifusterlic .................... 30
The lirn 1 Arab ..................... 3 fi

The $\mathrm{Cl}_{1}$, tit $t$ whiso $\ldots$ is 0
Tte W rri r, resy = orl t ...... . है

Yablyku, rime urine oll, fute - 300
Visavilt, Iriltguwia crimson .... is 11
Wi therprovi . . .. .. . . .... ... is is
Wisi in luwn in rich datk phle $\quad \therefore$ is
Yender Sicitel, pille purple ........ 3 b
7. Lus ier, Ilush, fil e ................ के is
W. Ika, d I cate l lenteh ........... 3 ti
(UMHOS K1.HS, TO HE 1'LANTED IS L.A1:GE QUASTITHE.

Catambien., seedl!n r plants.


Forrititerm jer dis. if $0 \ldots$ \& 0
*ry Atruic .. .. I! U . 1- 0

rerystrols... . 120 .. 14 0
Myrifils , $34 \ldots 1213$
iryfirne $120 \ldots 240$
'unti in, gonal trin pivits
1 + r l 0 号) 1120
Etrol r $r$. $\quad$ i) $0 \ldots$ is ()
extralure .. fuer doz. $120 \ldots 4 \% 0$

## MISCELLANEOUS AMERICAN PLANTS.

Eachs.
B. d. B. d.

## ANDROMEDA

of sorts ........... per duz. 40. 180
AZALEA -


A new hasly Azalea, very Hs liut.

- bt isit ........................ 1 fi
fontica. 9 :012 in.... per doz. © 0
1:2 to lıis....... ., 30
l4is. to 9 It.
120

Each.
s. d. s. d.

## COMPTONIA -

a plenifolia $\quad 26$

ERICA (Tl.e Heait -
be t hardy gamed serts
per doz. G u 180

GAULTHERIA-



## FOREST TREES.

Heiglts and prices of the nbove will loo forwarded on applicatiou. Wo lave also a fine stock of Shrubs for Cover Planting.

## I'LANTING DONE BY CONTRACT.

HERBACEOUS AND ROCK PLANTS, CLIMBERS, \&C.
For sorts and prices of the above, of which wo have a most extensive collection, sce our Gcneral Cataloguc, page 68.

## STOVE AND GREENHOUSE PLANTS.

Wo have a small but choice collcction of the above, prices of which we shall be glad to communicate.

## ROSES

A doscriptive Catalogre of the above, of which we hold a large, healthy, and wellgrown Stock of all the hest varieties, may be had post free on application.

Price-Standards or Half Standards, 15, to 18:- per doz. Dwarf, $9 /$ - to $12 /-$ jer doz. $60,-$ per 100. Selection left to ourselves.

## FRUIT TREES.

For names and descriptions, see General C'ataloguc, page 81.

| Each. | Each. |  |
| :---: | :---: | :---: |
| s. d. \&. d. | s. d. s. d. |  |


| APPLES, lest named sorts- |  |
| :---: | :---: |
| Standards | $10 \ldots 16$ |
| legramids | $10 \ldots 16$ |
| Dwarfs or Buslies | (1) $9 \ldots 10$ |
| APRICOTS, hest maned sorts- |  |
| Dwarf, traiued | $86 \ldots 50$ |
| Standards | $50 \ldots 76$ |
| ASPARAGUS, strong, per 10026 |  |
| $\text { per } 1000$ | 200 |
| CHLERRIES, best named sorts- |  |
| Stamlards | $13 \ldots 16$ |
| Tyramida | $26 . .36$ |
| 1) warfis or busly | $10 \ldots 13$ |
| D warf, trained | 36 |
| CURRANTS, best sorts- |  |
| Black, Red, and White, per doz. | $20 \ldots 30$ |
| DAMSONS................... .... | 16 |
| GOOSEBERRIES, fine sorts, per-doz. | $\underline{20 \ldots 40}$ |
| MEDLARS, WALNUTS, and QUINCES | $10 \ldots 16$ |
| MULBERRIES | 76 |

NECTARINES, best named sorts -
Dwarf, trainet ............... $36 \ldots .50$
Staudards ..................... is 0 ... 76
NUTS and l'IIBERTS, per doz. 6/-, $9_{1}-$, and 120
PEACHES, best named sorts-
Dwarf, trained ............... 3 ; ... 50
Standards, trainctl ......... 50 ... 76
PEARS, best named sorts-
Standards
$13 \ldots 1$ f
Pyrminids.......................... 16 ... 50
D)warf or I3ushes ........... 10 ... 1 3

1) warf, trained ............... 36

PLUMS, best named sorts-
Standards ..................... $13 \ldots 10$
Pyramids ...................... 26 ... 3 6
Dwarfs or Bushes ......... 10 ... 13
Dwarf, trained …........... is 6
RASPBEliRLES, fine sorts, per duz. $20 \ldots 40$
STRATFBELRRILSS, fine sots, jer doz. 36 ... 50
VINES, best mancit furts ..... is 6 .. if


W Batizon
\& SON ; frai:ithantive

Machive

## W. BARRON \& SON'S TRANSPLANTING MACHINES.

Thest: Transplanting Machines have removerl hoth Evergreens and Deciducus Trees over bu fert high, to considerable distances, with almost invariable suecess. By the uso of these Machines an effect can be produced at once which could not be otherwiso accomplished in one or two generations ; so that a phace is soon made enjoyable to its possessor, and tres of great beaty and value can be removed to more suitable sites, or prevented fom heing spoiled when planted too near others.

Thery were invented by Whabim Babmos, the first of them being used in February, 18:31. In Novamber, 18i3], hu Transplated a C'odar of Lobanon, forty thece fert high, and forty-right feet in dianctor of hranches; the stem of this Coflar, which at that timo was two feet in dimmeter, is now more than ten feet in cirenmference. A Treoseventy: two feet high, was moved more than two miles in an upright position. Yews from six to cight handred years ohl have been movorl with the greatest suceess. Oaks and Larches from forty to fifty feet high have been moved in the iniddle of shumer without losing a leaf. Large Sprace and Silver Firs on the limestone formation, bave wade a shoot eighteen inches in length the second year aftur their removal.

## Among others, wo havo binit Maclines for

His Crace: thi: Dife: of l'ontlind.
IIls Grace fle Defke of Minchister.
'Ine Nost Nuble the Mubreis of Westannster.
The IRhint Hon. the Einhe of'Shafohio and Wambington.
The Riont Honothabee Lomd Whalock.
The Royal Botanic Gabdens, Kizw, de., dec., \&oc.
The Cobporition of the City of Fremulig.
Gland Duchy of Baden.

> TESTIMONIALS.
> Tauclragce Custle, Comnty Armagh, Irclaul, 4th Anch, 880 .

Gentlemen,
With one of yonr large machines we have transplanted over 130 trees of 10 yeara' growth, incheding Spunsh Chestunts, Limes, Sycanores, and Oaks-but chie ty the latter-with balls varying from theo to eight tous, and in every instanco with complete success.

I remain your obedient servant,

## J. FORDFCE,

Agont to His Grace the Duko of Mauchester.
Millichope Park, Church Strotton, Shropshire, March 22, 186!.
My dear Sir,
I hase much pleasure in certifying as to the great success of the operations in tree-moving, which wero carricd on at this place muder your directions, between the years 1858 and 1861. During that period there were moved hace, on your system, without any regard to time of ycar, a great number of trces of all sorts and sizes, but mostly Lvergreens; a good many of these boing Yews of large sizo and of great age.

From my experience of your system. I have no hesitation in saying that, if tho directions given aro duly carried out in all respects, complete success may bo considered a certainty.

I am, dear Sir, yours very trmly,
C. O. CHILDE l'EMBERTON. 'Thoruhill, Cowes, Isle of Wight, Juno 4, 1869.
Sir,
I have very great pleasure in bearing testimony to tho success which has attended the removal of somo hundred of large treos upon your system at my place, Lillesden, in Keat, and to the perfect efliciency of jour machines, and tho intelligenco and zeal of the men you send with them. 'Tho beauty of my placo has been increased, under your aid, in a degroo, which, under any other plan, must have been the result of a century.

I romain, Sir, your obedient Serrant,
EDWARD LLOYD,
Mr. William Buron.
Of Lillesden, Lieut.-Col.

## THE LAWSON COMPANY'S LIST.

No. [V.-FOREST TREES, SHRUBS, \&c.]

## 1874-75.



THE

## AWSON Seed \& Nursery Compan

(LIMITED),

## EDINBURGH AND LONDON.

1 GEORGE IV. BRIDGE, EDINBURGH, ANI)

106 SOUTHWARK STREET, LONDON, S.E.

NURSERIES-Bangholm, Golden Acre, Wardie, and Windlestrawlee, EDINBURGH.

## TABLE OF CONTENTS.

PAGE
SEEDLING AND TRANSPLANTED CONIFEROUS FOREST TREES ..... 3
SEEDLING AND TRANSPLANTED FOREST TREES ..... 4
FRUIT-TREE STOCKS. ..... 6
ORNAMENTAL TREES AND SHRUBS (Comifera) ..... 6
ORNAMENTAL TREES AND SHRUBS (not Comifirous) ..... II
LIST OF CATALOGUES TO BE HAD ..... 26
PLANTERS' TABLE ..... 27

## 1874-75.

## TREES AND SHRUBS.

The l'ries are for Ordirs neciacid prior to the Plants biing sold. The higher fates indicate superior quality. Spe Tal Estimates gizicn for largi quantities.

## extra selected plants are charged proportionally higher.

?acking Materials are charged at the lowest price, and one-half invoiced valne allowed fer them if returnod immediately after the Plants are unpacked, free of expense, in condition fit for use, and their despatch duly advised.

## SEEDLING AND TRANSPLANTED CONIFEROUS FOREST TREES.

P'er 1000
2 years seedlings ..... 76
6 to 9 inches transplanted ..... 176
9 to 12 inches transphanted ..... $30 \quad 0$
12 to 18 inches transplanted ..... 400
SPRUCE, NORW $\begin{gathered}\text { or Comaox- }\end{gathered}$
2 years seecllings ..... 36
3 years seedlings (fine) ..... 50
3 years seedlings, 1 ycar tamsplanted - ..... 7
9) to 12 inches, transplanted ..... 126
12 to 18 inches, transplanted ..... 150
18 to $2+$ inches, (tansplanted ..... 210
SPRUCE, Black daerican-
2 ycars scedling: ..... 150
3 year, seedling: ..... 210
6 to 12 inees, transplanted pe 100 , ; 1
12 to 15 in., transplantedcach, $1 / 10$ i 6. 1.
SPRUCE WHite Avericas:-Per 1000s. d.
1 102 feet transplanted ..... 40 o
2 to 3 feet
WHYMOUTH PINE- .....
106 .....
106
2 years seedlings
2 years seedlings
210
1 year seedlings, 2 years trausplanted ..... 250
2 yeals seedlings, 2 years transplanted
2 to + lect, thrice transplanted, $7^{2}$ Ico,
$25 / 1050$ /
YEW, Cosmas-
6 to リ inches eransplanted ..... 75
9 to 12 inches transplanted b) 100,15 !
12 to 18 inches transplanted - $30 j$
2 to 3 feet, twice transplanted $-\ldots-$ - $50 /$
3 to + leet, twiee transplanted, $\dagger \mathbf{1 0 0}$,$10010150 /$

+ to 5 feet (fine)-...-.-.e.e.eh, 26 to ..... 50


# 2. SEEDLING AND TRANSPLANTED FOREST TREES. 

See page 3 for Connerous Forest Trees.


唯
. d.
BIRCll, Cummus-
Per toco
2 to 3 feet transplanted ..... $30 \quad 0$
4 to 6 feet (fine) - - $7^{2} 100,35 /$ to $50 /$6 to 10 ft ., grown singly, _each, 1 , to $2 / 6$
BIRCH, Webping-

- year scedlings (fine) ..... 50
2 years seedlings ..... 6
12 to 18 inches ..... 176
18 to $2 .+$ inehes transplanted ..... 250
2 to 3 feet transplanted ..... 30 -
8 to 12 ft ., grown singly, each, $1 / 6$ to $5 /$1 year seedlings 1 year transplanted .- 702 to 3 fcet transplanted. --.-. -- -- 350
BROOM, COMMON -
1 year seedlings, 2 years transplanted ..... 210
BUCKTHORN, Sea-
I $\frac{1}{2}$ to 2 feet transplanted - f $_{2}^{2} 100,1 \frac{1}{2}$CHESTNUT, Horse-
2 years seedlings ..... 6
18 to 24 inches transplanted. ..... -
2 to 3 feet transplanted ..... o
4106 feet transplanted ..... -
6 to 10 feet .......-...-. ctich, $1 / 105$ /1 year seedlings (fine)6
2 years seedlings ..... 0
12 to 18 inches ..... -
6 to 8 feet -...-----.-each, 1/ 10 1/6
12 to 18 inehes transplanted ..... $30 \quad$
18 to 24 inches transplanted, ..... $50 \quad$
Elder, Scarlet Fruited-
1 to 2 feet transplanted $-z^{2} 100,10 /$I to 2 feet transplanted -$)^{1}(\infty, 10$
ELM, Wyen or Scotch-
1 year seedlings ..... 50
18 to $2+$ inches transplanted. ..... 176


CEAN TREE or WHLD CIAERRYSec Fruttotree Stoens, puge 6.
11.17EL-

2 years scerllings -.-.-....................- 150
to 102 fect tranaplanted................ 250
10LLY, COMMON-

1) 1012 inches, cranspiantel, \#1 $100,21$.
$1 \mathrm{~S}_{6}$ ) 2 in., wice (rassplanted -. 50
2 to 3 teet, twice tramsplanted $\quad 100$
+106 feet -.......-cach, 3,6 to 106
HOR.ABEAM-
g to 15 inches transplante 1 ........... 126
if to 24 inches transplanted .......... 25
2 to 3 feet transplanted... -............ 30 . 0

6 to 10 feet.......... each, \& 6 to 5
LABURNUW, Evgassu-

3to 5 fect tran-plante l-.................... 0

L, ABURNLV, sooch-

3 to 5 feet transplanted ................. 50 .
2) 10 12 1 et ...............cach, 1 to $\ddagger$.

LHH:, Cunvor-
$1 \frac{1}{2} 102$ fect transp lanted - $\beta^{2} 100,21$
21,3 feet transplanted ..... - 30
.3 to + lect transplanted . . . . . - 45.
+106 feet iransplanted .....
6) 1012 tect -...........ach, $110 \%$ or
M.1PILL, LNG11s11-

1810,30 is cher tran-phanteri.......... 210
3 to + feet transplanted. .................. 500
MAl'LE, Norway-
2 (1) 3 feet transplanted. ............... 30 . 30
$310+$ teet transplanted .................. to 0
(1) 108 feet tranpilanted - - - $100,00^{1}$
\& to to teet ............e in, 10 , 3 h
O.AK. Convox or lixa. Qu-suspedanculata

1 1 car secthngs............................ 76
is iv $2+$ inches transplante $1 \ldots . .$.
210 . feet transplanted ..................... 300
$3^{10}+$ leet Mratspl nted.................. 50 o


2 vears seetlings -....................... 10
12 to ts inches tran phantut......... 21
12 to th mehes tran phantud.......-- 210
6 to i2 feet (finc) -....each, 1.6 to 5 )
12)PLAR, BARAsM-
$=10.3$ feet transplanted
350
3 to 4 feet trath 1 anted..........................
4 (1) 5 ic t tansplanted
fin 8 teet tranaplanted, ... 100,50
POI'LAR, BLick ITALIN-
18 to $2 f$ inches
$30 \quad 0$
3 lu + teet transplanterl ..................... 60
(1 to 8 licet (fine) $-\ldots . .-b^{3} 100,50$ :
y lu 10 teet (fine) $-b^{3}$ doz $t 2$ to jo
POPLAR, LOMBARMM-
l'er toon
2 to 3 feettransplanted ..... s.
50

+ to 6 feet transplanted 100, $20 /$
73 doz, 121

8 to 12 ft., bushy' veryfine), each, $2610 \% 1$

## poplar, oxtario-

2 to 3 feet transplanted

ed..

….....- $50 \quad$

81012 feet -.........-each, $1 / 103,6$

HOPLAR, WHITE ligypthax-

2 tu 3 feet transplarted, $--7^{2}$ 100, 15 !

+ to 6 feet $\ldots$.....e 100, 20, 10. $30 /$

Privet, Evergrees -

12 to 18 inches transplanter-......... 150
18 to 24 inches transplanted ....... 250
2 to 3 feet transplanted - . . .-......... . . 30 o
PRIVET, Bux-lemed Eyergreex-
12 to 18 inches transplanterl --.-.-. - 250
18 to $2+$ inches transplanted ......... $f^{2}$ o
PRIVE:T, Oval-ieaven-
12 to 18 inches ......................... 50 .
$1 \frac{1}{2}$ to $2 \frac{1}{2}$ fet transplante 1 ............. 6o o
3 to 4 teet transplanted. ............... $75 \circ$
SERVICE TREE-
12 to is inches transplatitel, \% $100,10 /$
4 to 5 fect tansplanted ... - $30 /$
610 to feet (fine) ...e.ch, 1610 5)
SLOE or BLACK THORX-
91012 inches transplantect........... 120
18 to $2+$ inches transplanted.-....... 218
SICAMORE O PLANE-
1 jear secedlings (fure) ............... 50
18 to 24 inches transplanted.-....... 210
2 to 3 fect trangplanted -.......-....... 25 -
$3^{3}$ to + feet transplantect--................ 3.5 o
6) to 8 feet transplanted, ..-1 100, to

8 to $t 2$ fert (fine) ....cch, 1 ; iv
THOKV or QUICK-
1 year seedlings (fine) ................ 36
2 ycas secdlings ....................... $\leqslant$
12 to is inches transplanted.......... io 0
18 to 24 inches transplanted......... 150
241036 inches trankplanted -........- 280
61012 feet-......e each, 1,6 to 106
WAL.VUT-
3 to + feet transplantel -- - \% $100,30^{\prime}$

+ to 6 feet transplanted ... - $\quad$ ?
6108 futt-...........each, 1/102.6
WHII. or GORSE-
1 year ceedlin/s .-.................... 70
2 ytars secthng ............................... 10 6
2 feet ransplanted.......................... 210
WILLOW, Bedrort-
1 jear cuttings
15 。
2ti) 3 fect transplantecl........................ 2.50

iviliof, Cane ut Bashet-
1 year cuntings.
176
2 to 3 leet transplanted..................... 250
Whlow, Hantagdus-
1 year cuttings.......................... 150
2 to 3 feet transplanted -................. 25 -
(1 to 10 fect -....- pe $100,15 / 1030 /$
Whllow, Nohfolk-
1 year cuttings ........................ 15 .

8 feer twice ransplanted, . . \% 100, 15/
willow, Conmus Osha -
1 year cutings
$15 \circ$
1 year tranıplauted .................................. 2 is

|  | l'er |
| :---: | :---: |
| Willow, Dutell or Red Osibir1 year cuttings. |  |
|  | 1.5 |
| 1 year transplanter | 25 |
| Willow, Yeliow Osier- |  |
| 1 year cuttings | 17 |
| 1 year transplanted |  |
| WILLOW, I'ackthreaid Basket- |  |
| 1 ycar cuttings | 30 |



Per sumo
Willow, Purpli: Baskers. d.
 WiLLOW, Red Basket

WILLOW-
various 'Irce Sorts, named. .-. . $50 / 101050$ various Basket Sols, 1 year cutting's 150

## 3. FRUIT-TREE STOCKS.



76

## PEACH-

18 to 24 inches transplanted 100,25 !
PEAR, Crab-
1 year seedlings (fine)-......--7/6 to 10 ,
2 to 3 feet transplanted ---.-.....-. to 0
PLUM STOCKS, Commos-
I to 2 feet transplanted --.-. --. - - 350
2 to 3 feet transplanted - $7^{2} 100,12 / 6$
SLOE or BLACK 'IIIORN. Sice page' 5. QUINCE, COMMON-

2 to 3 feet $-\ldots-\cdots-y^{2} 100,12 / 6$
Cherry, Perfunedor Mallaled (Cetasus Per somo Muhalch) -
1 to 2 feet transplanted $-\ldots-\ldots$ - 30 - 0
3 to + feet transplanted - E $^{2}$ 100,10,6
6 to 8 feet ------- $7^{2}$ doz., 18 ; to $30 /$
,

## 4. CONIFEROUS ORNAMENTAL TREES AND SHRUBS.

ABIES, Don. (PICEA, Linh.) Sphucealba. Sce White Anerican Spruce, page 4.

varicgata
Aldertiana, 9 to 12 inches.
18 to 24 inches
2 to 3 fcet
4 to 6 feet -.................-. $5 /$ /o
Aicoquiana ----------------2/6 to
Brideesil, 9 to 12 inches
Brunoniana-.....-..........-. - $2 / 6$ to
canadensis, 2 to 3 feet .......- 1 / to
Douglasil, 6 to 12 inches $f^{2} 100,25 /$ 12 to 18 inches..... - $75 /$

3 to + feet - ------------ $-3 / 6$ to
4 to 6 fect $-\ldots-\ldots-3 / 6$ to

Englemanil ----.-.-......-. $2 / 6$ to
excelsa. See Normay Spruce, puge 4 .
aıchangelica..................-1/6 to
aurea variegata $-\ldots-------3 / 6$ to
Clanbrasiliana ---------- - $1 / 6$ to
Cranstonii ......-.-.-........-. $2 / 6$ to
echinæfornis.-.....-.-.-.-.-. - $1 / 6$ to
elegans, $y$ to 12 inches ---- $-2,6$ to




PINUS, Liun. (True Pine) -
Murbayana, 6 to 12 inches
Ocampи ( (beromiana) --.-----2/6 6
Pallasiana, 1 to 2 fect
parvifiona, 12 to 18 inches, --3/6 to 18 to 30 inches ----------5/ 11 patula
pRUCE, 1 to 2 feet -........--2, 6 to
Pinaster. Sećpage 3.
Pinea
fragilis

ponderosa, 4 to 6 inches, $7^{2}$ do $\%$ of 1妾 to 2 feet ------------2,6 to
pumilio. Sep Moustain Pine, puge 3.
pyrenatica, 12 to 18 inches-- $-1 / 6$ to 18 to $2+$ inches - -.------2/6 to
radiata, 12 to 18 inches ------ $/$ / to
migida, 6 to 9 inches - F $^{2} 100,25 /$
s.biniana, 6 to 9 inches ....- $1 / 6$ to 12 to 18 mehes ---------2/6 to
Strobus. See Weymouth P ine, pare 4.
albal --------------------2/6
nivea -------------------2/6 to
nana--------------------2/6 10
tabulæformis -------------2/6 to
syidiestris. Sce Scots Fir, fuge 3.
 PODOCARPUS, Heritie-

dacrydioldas ------------ 3 ,6 to
Japonica-------------------16 10
clcgantissima ------------3/6 to
macrophylia aurea
argentea
PRUMNOPITYS, Philippi-
rabgans --...------------- $/ 6$ to
pSEUDO-LARIX, Gord. Goliden Labcil-
Kтмpprail ---------------5/ to 10
RETINOSPORA, Siel.-


RETINOSPORA, Sicl:-
PLumoss -------------------2/6 6
aurea ----------------1/6,2/6 to
SQualliosa, 9 to 12 inches, fed do n, 9/
$1 \frac{1}{2}$ to 2 feet--.-----......-- $1 /$ in
Salisiburia, Suith. Matden Hair
Treb-
adiantigolia, 9 to 12 inches, $7^{2}$ doz., $6 /$
 dissecta
lacmiata
$\square$

macrophyylla incisa
SAXE-GOTH EA, Lindl.-
cunspicus, 9 to 12 inclues, ----1/to graeilis, $f$ to 9 inches
SCIAD) Pitys vertichiata (Umbrlla
Pinc) -------------------3, $\mathbf{3}^{\prime 6}$ to 10
SEQUOIA, E゙udl. (Tarodium)-

Lawsosiaxa ---------------5/ to 106
slampervirens, 18 to eq inches..... 1
3 to: feet ------................ 26
Wellingtonia, 6 to 9 incles 72 doz., $12 /$
12 to 18 inches-.....-.-1/6 to 26 18 to $2+$ inches---------2/6 to 36

 +106 fcct -------------10/6 to 210 6 to 10 fcet -------------21/ 106.30
varicgata -..............----- $/ 6$ to 42 o
Taxodiuni, Rich. Dechnueus Cy-
press-
distichum -------------------1/to
6
semperdiens (Ste Seqcola).
TAXUS, Linu. Yew-
ADPRESSA, 18 to 24 inches $\qquad$
variegatal ---------------10; 6 to
daccata (Common Yoni). S'ce page

| aurantiaca $\qquad$ | 2 |
| :---: | :---: |
| Barroni famin |  |
| brevifolia | 2 |
| cheshuntensis, 2 to 3 fect $-\ldots 2 / 6$ to | 3 |
| Daviesii, 1 to 2 feet-..-----1/6 th | 2 |
| Dovastonii, 9 to 12 inches |  |
| 12 to 18 |  |
| 2 to 3 fect -----------3/6 to | 5 |
| Standards.-----------7, 6 |  |
| with lcaders--.---.-----2,6 | 5 |
| variegata ---------------5/10 |  |
| clegantissima, 9 to 18 inches $1 / 6$ to | 3 |
| erceta, 6 to 9 |  |
| 3 to + feet $-\ldots$ - | 3 |
| 4 to 5 fect-...-----------3/6 | 5 |
| ericoides.----.------------2/6 to | 5 |
| fastigiata (Irish Yell) I to 2 feet Ploz., $6 / 10 \mathrm{~g} /$ |  |
| 3 to + fect ----.-.-...- $1 / 6$ to | 2 |
| 4 to. 5 fect (/inc)--..---2/6 to | 3 |
| 5106 fcet (Jiur)--------5/10 | 10 |
| 7 to 10 fect (finc)--.---12/6 to |  |
| variegata argentea-------2, 6 to |  |
| aured --.-----------2/6 to |  |
| do., Fisher llolurs ----2,6 to 2 |  |
| Foxii, 12 inches |  |



## All Leading Sorts, in Quantity, at Reduced Prices, per doz., 100, and 1000 .

## speimuen J'ants of all the lionling Sorts ty spacial bargitin.

## 5. ORNAMENTAL TREES AND SHRUBS.

## Sut pase for orvamin mai. Coniffre




Each
CISTUS platysepalus ..... 6
pupubirolitus ..... 6
RETOLETLM ..... 0
ROSEUS ..... 6
salvifolius ..... 6

CLEMATIS Ai，hert Victor ..... 6
Alexandra ..... 0
Auresa grand flora ..... －
cirrhosa ..... 6
Flamyul．a ..... 6
FLORIDA ..... o
Standlishit ..... 6
pirancolertensis ..... 6
fortuyei ..... 6
If：versonil ..... 6
Henayil ..... 0
insuievsis ..... 6
Jackulavil ..... 6
John Got I．， 1 Vertru ..... 6
L．any Bovili． ..... 6
Lady Caruline ．لiville ..... 6
IANUCTVOSA ..... （
can lida ..... 6
l．ansoniana ..... 6
Lord Lóndrssurunco ..... 6
lety lamerse ..... 6
Musifica ..... 6
montana ..... －
Mrs Jasis Batemin ..... 6
Ottu Frgebel． ..... 6
PATESS Amclia ..... 6
Helena ..... 6
insignis ..... 6
mon trosa ..... 6
Sophia ..... 6
Priaghom halis ..... 6
Refrivf ..... 6
RUBとLI．A ..... 6
RLBRO－VINLACなA ..... 6
Steaumint ..... 6
srat op lama ..... 6
Syvfixis ..... r
THE GEM ..... 6
Themas Moure ..... 6
vhitina purfurea ..... 6
Vital．ba ..... 6
Chichil ..... 9
f．alba ..... 6
rubra granditlora ..... 6
renosa ..... 6
CLETIIR 1 al．ximola ..... ，
StABRA ..... 6
tomestosa ..... 6
CLHy゙TlUS puriceus ..... 6
COCCOI．OBA vespertilioyis ．．．．．．$/$ to ..... $\sigma_{0}$
COLLETH ferox ..... 6
SPINOSA ..... 0
coluted arbomescens ..... 0
sangunea ..... －
COMIYONII aspleshfolea ..... 6
CORCHORUS Japovicus ．．．．．doze，
flare plenu－．．．varicgatus6
COR1ARIA MYRTIEOLLA ..... －
risctronta ..... 。


syivatica. Dee Commos Beech, page + .
asplen folia, +106 feet ....... 26 to ..... G
cartancerfolia ..... 6
Comptonatiola ..... 6
cristata, 2 to 6 feet .........-- 1,6 to ..... -
cuprea (Cupper Beech), 2 to 3 feet ..... ! ! t 1
3 tu 5 fect.............. 1 i) 10 ..... 6
5 to 8 fect.-...........-2 6 to ..... 6
macrophylla, 3 to 6 feet ...- 16 to-
pendula, 6 to 8 feet
purpurea (Purple Beech), 2 to 3 fect ..... o
10 fer ..... 6
6 in to feer-............ $5 /$ to 4 ..... -pendula, fo to 8 teet -... 3,6 to 210
salicitolia, 2 tu \& feet ......-1) 0 ) to 3(
quercitola, 2 to 6 fect ..... 6




LIURUS aclieatis (Chrast': iomp)
ed doz.a

SSIFIORA Cablifa

 ('hestal) enitrorsica
CANMDFSSIS, 3 tect
(bersines. 3 to + lect
mechor, 3 fect
Debsa, 4 to 6 feet
f1.Aㅅ, 3 fect
cracilis

nemecti, 3 to $S$ feet..........- to

rosea, 3 to feet .............- - to
apir ita - .......................-- - to

CRIWINKIE. Se Vincts, page 25.
RNETTYA A NGESTIFOH, $\qquad$
canimoa
…-.....--
flortbesida
surraplyya -

pllusa
speciush - . .-........-iv duz, (i)
IH.ADEI.PIUS Hore pleno, ito 3 feet ....... 6 , 1 in varregathe, 1 (1) 2 feel ......... 1 1o


Gordoniavus --........................... :o
GAANDDHORIS
1soderkls
ficl. to

POPUIUS (Poplar). Siepers.
 3 w 5 ct - ...........-
fito 8 feet -...................- 1 10

ratsamitera fate kny.......-1 to 26

ctibictis taricglta- ...............- $1_{1}$



HuDsovil -.............................. 10

Linni.erana -.................................. 1
incana ----.....----.................. 10
MACROPMMLIAA sariegata ....--26t1) 50

tarnula (Aspon) .....................-

POTENTILLA FIORIBVDA-.....................







dovistica. Serfheit'treb.catalionie.
flore pleno ---........-............... 2
variegata aurca --..........-.......- 18
institia (Bullace I'um) $\ldots$...-1/10 26
myhnotasa (Chemry Plum) - ...... if
sivinsis flore alloo pleno ............ 1 of
spisinsa flore pleno (Doulle Sloc)t 6 to 36

## prunus trifora. See Maygdalopsis

 Lindieyil, p. 12. varicgata ----------------1/6 to
PTEROCARYA caucasica --.-.--- $1 / 6$ to PTEROSTYRAX uISPIDUM 26

 PYiRUS acerifolita, 2 to 3 feet

ANBBICANA ------------------1/6 to fastigiata, 3 to 4 feet A. albo pleno f. rubro pleno----.-.-.-. --

Aria (Serviceur White Beam). Ser 10.5. latifolia, 2 to 6 fect io


$$
\text { undulata, } 3 \text { feet }
$$

a.myginalifollmis, 3 to 8 feet. - I 6 to astracanica fastigiata, 2 to + fect... aucuparia (Mountain Ash). Sée page 4. fastigiata, + to 6 feet ---.---- $/$ to
fructu-lutea, 2 to 3 feet.$----1 /$ to pendula, 6 to 10 feet stems, $-2 / 6$ to variegata
baccata (Silocrian Cral) 2 to 6 fect 1 /to aurea
maxima
rubra
rollwyllemiana, 2 to 5 fect. $-1 /$ to

communis (Pear) A. pleno ----1/to angustifolia
variegata, 2 to 4 fect $-\ldots .-$ - $1 / 6$ to
fructu-varicgata...$--------1 /$ - to
 fruiting sorts. Sce Fruit Trees.
coronaria, 2 to + fect $-\ldots-$-...- $/$ to
mefaginfolia, 3 to 6 fect.....-- $/$ /o
Fl,ORIBUNDA, 2 to + fect $-\ldots---e^{-}$/ 10
netrioopiryile, 2 to 6 feet -..-- $/ 6$ to
intermedid, 3 to 6 feet -...-- (otl. to
KuDU.
I.ANUGinos.a, 3 to 6 teet --...- $1 / 6$ to
malus (Appile) fol, argenteis
aurea nervosa, 2 to 4 feet
argentea marginata, 2 to 3 fect.-. -
jaspida.
spectabilis
MaUlei (new Japan apple) ----21/to
nepaliensis, 2 to 4 fect ---.--- $1 /$ to
pininatifida, 2 to 8 fect ------- $1 /$ to
arbuscula, 3 to 6 fect.-- -- - $/$ to
PRUNifolia, 3 to 6 fect -------1/ to
coccinea, 2 to 8 feet -.....-- $1 /$ to
hybrida, 3 to 8 feet $-\ldots-----1$ / to
RINGO, 2 to + feet --.-.--- $-2 / 6$ to
salicifolia, 2 to + feet ----- - $/ 6$ to
salvifolia, 2 to 8 fect $-\ldots .-$.-. $1 /$ to
sinensis, 1 to 2 fect
Sonnus (Scriver), 3 to 6 feet,....-1/to

spectabilis, 2 to 4 fect..--- - / to
spuria, 2 to + feet ---.-.-.-.-- - $/$ to
'Tueopirastil, 3 to 6 feet $-\ldots$ - $/$ / 10
TORINGO, 2 to 3 fect
undulata, 2 to 3 feet3636
0626

Each
s. $a$.

QUERCUS (Oak) Ficillors pendula, 6 to 8 feet ---------
anericana coceinca ..... 26
Craris (Turkey Ouk). Sce puge s.austriaca
fulhamensis, 2 to 4 feet$\begin{array}{ll}5 & 0 \\ 2 & 6\end{array}$
heterophylla, 4 to 6 feet ..... 26
laciniata ..... 36
Lucombeana -----.-.-.----2if to incisa, 2 to + feet ..... $\begin{array}{ll}.5 & 0 \\ 2 & 6\end{array}$
varjegata argenteci, 2 to 5 fect $2 / 6$ to ..... 76
variegatia ..... 106
pendula - -i 6 to ..... 10
coceinea, i year secedlings for 100,762 years seedlings ...- - 10,618 to 24 inches -...- - $50 /$2 to 3 feet $-\ldots-e_{-}-100$ -3 to 6 teet -------------- I/6 to
DENSIFLORA ..... -36 to5050
facina ..... 16
fil.abra $-3 / 6$ to ..... 6
h. Fix (Evorgreen Oah)
9 to 12 inches.-...- $7^{2} 100,25 /$
1 to 2 fect ..... - $50 /$
4 to 8 fect doz., 9/
Fordii ..... -2.6 to76
diversifolia ..... 6
dentata ..... 6
iutegrifolia ..... 6
latifolia 2610rotundifolia0
salicifolia ..... 6
scrratifolia ..... 6
Loxetti ..... 6
Nobilis ..... 0
priduxculata (Common Oak). Scepage 5.
asplenifolia, 3 to 5 fect -----2/6 to50
concordia (Golden Oati) - ---2,6 torubra, 4 to 10 feet --.--- 26 toviride, 3 to 8 feet ------- 2, 6 to
Fennesii, 2 to 8 feet ..... 1/6 to
filicifolia ..... -26 to
heterophylla, 2 to + fect $---1 / 6$ tocucculatadissecta
nigra ..... $-3610$nigricans$\begin{array}{ll}3 & 6 \\ 7 & 6\end{array}$

hosa. Sor separate. Citatogue, utd pase 29.
ROSMARINLS OFFICINMLS . . . - Od. Of
rarléatur-............- 10
RLBUS rauticasls (Branl/fe)-
il. pleno ailso
06
rubra-..-.................... ○
superba - .-................. 0 "

เапाе $\boldsymbol{1}$ )
lidaus (liexplerry). dectalis Thes Citalogex aidp. 28.



repestris (Ihmala ion Brumilo,..-- io
spbetablis (S. Imon Berry) -......- i, i,

RUSCUS actemates (Buther's Branm) - 0
rotundifolius -.........-....---- 0

Ractulusts ( filwandran Laturel) -.- 10
RUTA chatembes .....................- 16
SALIX (Hillow ). See prage:.

alba peaduld (Bedtard Hiepung), ... 10




pendula (American W'eqpron Wîther.),
6 to 10 feet stems 16 to 210
variegata..-- -....-----..........- 11
nftatits, z to 3 feet ...................
Whathet, $210+$ leet .- $t$ dur. $=$ of
6 (t) 10 teet $-.--\cdot-----1,6$ to
aurantiaca, 2 to 3 teet
6

|  | $\begin{aligned} & \text { Each } \\ & \text { s. d. } \end{aligned}$ |
| :---: | :---: |
| $\begin{aligned} & \text { SALIX (Ilillow) } \\ & 100 \text { Sorts, named (3 Cultings of rach), } \\ & 150 \text { Sorts, named (3 Cuttings of cach), } \\ & \text { for } 150 \text { / } \end{aligned}$ |  |
|  |  |
|  |  |
| SALVIA officinalis --------------- | - 6 |
| Sambucus (Elder) canadensis. Gd. to |  |
|  |  |
| heterophylla |  |
| laciniata -----------------6id. to |  |
| leucocarpa ---------------6d. to |  |
| monstrosa----------------6.-6d. to | 16 |
| rotundifolia -------------6d. to |  |
| variegata argentea ----------1/ 10 |  |
| aurea |  |
| bescens |  |
| racemosa. Sce Scambet Elder, p. 4. <br> SANTOLINA Chamecyparissus....... |  |
|  |  |
| viridis | 10 |
| SHEPHERDIA argentea |  |
| canadenisis--------------------- |  |
| SKIMMIA Japonica -------------- / to |  |
| laureoba |  |
| OBLATA ------------------2/6 to |  |
| SMILAX aspera |  |
| rotundifolia |  |
| solanum crispum |  |
| dulicamara |  |
| alba |  |
|  |  |
|  | 76 |
| variegata --------2/6 to | 36 |
| SPARTIUM (Spanish Broom) JUNCEUM, 2 to 3 feet, ३ doz., 4 / |  |
| f. pleno------------------- |  |
| SPARTOCYTISUS Albus durus.------- |  |
| SPIREA Adiantifolia - ------------- |  |
| ALnirolia -------------------- |  |
| arispoli |  |
| baccat |  |
| bella carnea |  |
| $\begin{gathered} \text { CALLOSA } \\ \text { alba } \end{gathered}$ |  |
|  |  |
| cana |  |
|  |  |
|  |  |
| Exochordia---------------------------- |  |
| flexuosa ---------------------- |  |
|  |  |
|  |  |
| hypertcifolia ---------------- 0 |  |
| incana media------------------ |  |
| incariata---------------.---- 0 |  |
|  |  |
| Lindleyana |  |
| NOBLEANA $\qquad$ ${ }^{\circ}$ |  |
|  |  |
| Palmata ----------------2/6 to 5 |  |
|  |  |
|  |  |
|  |  |
| 3ALICIFOLIA-------------------- 0 |  |
|  |  |
|  |  |
| sorbifolia ---------------------- |  |
| thalictacid |  |

THALICTQCIDES
spirfea Thunberghana TOBOI.SKIA THILOBATA Prices of the leading Sorts $\mathrm{F}^{2} 100$ or 1000 on application.
STAUNTONIA latifolia-.-.-.-.-.-.-. I
STAPIIYLEA colchaca
plNNATA
TRIFOLIATA

## (10...- 0

AMMERDAMIA antennaria $\ldots$.....
SYMPMORICARPUS GLAUCUS ........ 0 o

OCCIDENTALIS

Raclaosus (Snowlerry) ... - bloz. 4
VUlGARIS 06

SYRINGA (Lilac) EMODI $-\ldots . . .-$-. I/ to 1



laciniata.-- -. -...............- 1 , to 16

vulgaris (Common Lilac) $\ldots-6 d$. to 2
alba
6d. to


Charles X. ........................... 1 / 10

Duchesse de Nemours.-........ I/ to
Dr Lindley .-................-.-. - I/ to

Louis Bonaparte .-...........-. - $1 /$ to

purpurea --..-..-.-................ $/$ to

rosea grandiflora
rubra
sibirica
sinensis alba
spectabilis ...................-. $-1,6$ to
'I'riomphe d'Orleans

Fine sorts, unnamed 䊉 doz., $6 /$ to $12 /$
TAMARIX AFRICANA $\ldots \ldots-\cdots$-........ doz. $4 /$
GALLICA -....................- $4 /$
GERMANICA --...............- $\quad$ -
iNDICA -......-.............- - $\quad$ /
TILIA (Lime), A.IE.RICANA .........-1/t(1

pubescens -...-.-.-.-.-.-.-.-.--2j6 to
eurorea. See page 5.
asplenifolia

filicifolia

grandifolia

- 6 to



parvifolia ....-..............-.-. - $1 / 6$ to
pendula, 5 to 8 fcet stems. $-.3 / 6$ to
platypliylla .................-. $1 / 6$ to
I.EPTOPIIYLLA.-..........................-1/6 to

ULEX eunor.ta (J'hin). Sec pages.
50/, $1075 /$


|  |
| :---: |

pendula， 6 to 12 leet stenss，$\ldots 51010$
barierata
CAupestais（Eliglish Eilm）．Sec page 4.
grafted， 6 to 10 leet ．．．．．． 6 to
betulatelid，+ feet
corylifulia ．．．．．．．．．．．．．．．．．．．．．－． 1 io clenata
gloniera：a．
Hanburyensis
incisd， 5 ket
m crophylla， 3 iv 6 tci ．．．．．．．．．．．． 6 major
monumentalis， 4 to 6 licet $\ldots .2: 0$
miyrtifulia， 2 to 10 feet ．．．．．．．． 1 ＇s
notio a， 2 to + fect $-\ldots-\ldots-\ldots$－ 1 io
perndula ．．．．．．．．．．．．．．．．．．．．．．．．．．．．． 610
plicala，＋tect－．．．．．．．．．．．．．． 1 ． 10

tortuosa ．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．1，io
varjegata．
argentea， 2 lo 6 feet..... ． 1 b 10
siminalis， 2 to 4 feet ．．．．．．If fo
variegata．
zfTUSA， 3 to 5 lect

glomerasa， 3 to 6 tect ．．．．．．．．．1，to
Scampstoniana， 4 to 5 feet
vegeta， 4 to 6 feet ．．．．．．．．．．．．．．1．10
viscosa，+106 feet.......---1 ，to to
montana（Hy،h Fim）．Seef． 4 ．
argentea yaricgata．．．．．．．．．．．．．．（f）to
asplenitolia， 2 to 6 feet $\ldots \ldots .$. ．to
compacta.............$---1^{16}$（1）
crispra， 4 tu 6 fiect ．．．．．．．．．．．．．．．．． $1 /$ 10

fastigiata（Cocerstemn Eilm）．．．． 1 to

Elim），stenis 6 to 10 feet $-3^{f}$（1）to
pumila， 3 to 8 leet ．．．．．．．．．．．i fi to
purpurea， 3 to 10 feet.....-1 ！ 6 ：
scabra， 3 to 6 feet..........-1 ！to Iatifolia， 3 to 6 feet ．．．．．．．．． 1 to variegata

erecta， 2 lo 3 feet


Several other Surts ．．．．．．．．．．．．．．－1，610

## ACCINIUN BC゚エIFOLIEM

Myrtillus
OVATUM

Vitis idaa
taricgrta

## 百

ERONICA ANDERBONII ．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．
variegata
DECUSSATA
6
0
PORMOSA
6
IJulkeava
sALにJFOL！

VERONIC：Speciusa
hybrida

other sorts ．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．


aurea marginata．．．．．．．．．．．．．．．．．．．．．it iv 2 6
bariegrata ．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． 26
LANTANIOIDES ．．．．．．．．．．．．．．．．．．．．．I IO 26
MACROCEPMALLM ．．．．．．．．．．．．．．．．． 6 （0 50


romeum，siandads ．．．．．．．．．．．．．．．6 10 5 5
steril＇s（sinullull or Guelider Rime）
G\｛． $10 \quad 26$


RETICLLATUQ ．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． 6

Tines Laurcstenus y 10 ： 12 incties t－d，z．， 6
15 to 18 inches ．．．．．．．．．．．．． 12
18 to 24 inches ．．．．．．．．．．．．．．．． 18
hirta， 121018 inches.......-12
lucida， 12 tu 18 incises．－quaz．， y（1） 131
v3ricgata．．．．．．．．．．．．．．．．．．．．．．．．．．．．．1／10
VNČA（Peruznkle）мasuル－duz．， 26
aurea reticulata ．．．．．．．．．．．．．．．36
clegantissina ．．．．．．．．．－．．

alba ．．．．．．．．．．．．．．．．．．．．．．．． 20
cacrulea pleno ．．．．．．．．．．．－ $6 /$
rubraflena ．．．．．．．．．．．．．．．．．$\quad$ ！
bat．egsta drgeniea ．．．．．． 26
aurea－．．．．．．．．．．．．．．．．．．．－ 30




IIETEROPHYLLA sariegith．．．．．．．．．．．．．．． 2 f）
Isabetra
f


SIEBOLDH
1
VUIPI，

WLIGELIA AM4自t1．15 ．．．．．．．．．．．．．．．．．1，to 1
alba ．．．．．．．．．．．．．．．．．．．．－ $1 /$ to 1 fo
Isolene．．．．．．．．．．．．．．．．．．．．．．．．．．．． 10
Siclznerit ．．．．．．．．．．．．．．．．．．．．．．．． 1 f，

Hor IENSIS tol．aurca marginata．．．．． 2 f
nivea fluribunda ．．．．．．．．．．．．．．．．．．．．．．if

Hendersunii ．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． 1 f
kermesina ．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． 1 f
Lemonci ．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． 1 ，

ROSEA．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． 1 f，

variegata argentea
aurea
－ 10
SiEbOLDIl variegatd ．．．．．．．．．．．．．．．．．．．．．．．．． 26
albo marginata．
6
XANT！IORRIILA APIIVOLIA（Ycllutu Rent

6
XANHIOXYLON fraxinELM（Io thuche


Large Quantities of the leading Trees and Shrubs at Reduced P'ices, and Spccimens, for immediate effict, by Special Correspondince.

The following Catalogues may be had free on application:-

GREENHOUSE and STOVE PLANTS.
HERBACEOUS PLANTS, incluiting ALPINES.
FERNS—GREENHOUSE, STOVE, and HARDY.
FLORIST FLOWERS and BEDDING-OUT PLANTS.
RHODODENDRONS and AZALEAS.
ROSES-Descriptive.
STRAWBERRIES.
FRUIT TREES-Descriptive.
GARDEN and FLOWER SEEDS, and IMPLEMEN'JS.
DUTCH FLOWER ROOTS.
GLADIOLI. .
AGRICULTURAL SEEDS.


## A TABLE FOR PLANTERS,

Showing the Number of Trees required per Imperial, Scottish, and Irish Acre, from 1 to 30 feet distance between each Plant.

| [MPERPAI. ACRE. |  |  |  | SCOTl心ll flort. |  |  |  | IRIN! ICRr. |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| an c . | $\checkmark$ muler. | 1) San e. | Au tor. | 1, :3- | $\cdots$ | $1-8$ | $v$ \% | 13, esue | N | 1 1zice. | Num $r$ r |
| 1 | 4.3,:560 | 12 | 302 | 1 | 54.260 | 12 | SSo | 1 | 70,56u | 12 | 410 |
| 1\} | 19,360 | 121 | 270 | 1 . ${ }^{\text {a }}$ | $24.3,4,5$ | 12 | 3.50 | 1 $\frac{1}{2}$ | 31,360 | 12! | 4.2 |
| 2 | 10,890 | 13 | 257 | 2 | $1.3,(m) 0$ | 1.3 | 324 | 2 | 17,6,40 | 1.3 | 417 |
| $2 ¢$ | $6.9) 70$ | 1.36 | 2.3) | 21 | 8.761 | $1.3 \frac{1}{2}$ | .300 | $2 \frac{1}{4}$ | 11,201) | 191 | 3. 5 |
| 3 | $4.8+0$ | 14 | 222 | 3 | 6,084 | 14 | 279 | 3 | 7.8.40 | 14 | 360 |
| 3.3 | 3.5 .56 | $1+\frac{1}{2}$ | 207 | .34 | 4,470 | $14 \frac{1}{2}$ | 260 | . $3 \frac{1}{8}$ | $\therefore$ ¢io | $14 \frac{1}{19}$ | .3.3: |
| 4 | 2.522 | 15 | 19.3 | 4 | S.422 | 15 | 24.3 | 4 | $4+110$ | 15 | .16 |
| 4 | 2,151 | 153 | 181 | $4 \frac{1}{3}$ | 2,104 | 154 | 22.8 | + 1 | $3 \cdot 484$ | $15 \frac{1}{2}$ | 202 |
| 5 | 1,542 | 16 | 170 | 5 | 2,110 | 16 | 214 | 5 | 2,822 | 16 | 275 |
| 54 | 1.440 | 16.18 | 16.4 | 5.3 | 1,810 | $16 \frac{1}{8}$ | 201 | 51 | $2,3,32$ | $161 \frac{1}{8}$ | 2100 |
| 6 | 1.210 | 17 | 120 | 6 | 1,921 | 17 | 18, | 6 | 1,9/10 | 17 | 244 |
| 615 | 1,0.31 | 178 | 142 | 63 | 1,20) ${ }^{1}$ | $17 \frac{1}{2}$ | 188 | 6 ) 1 | 1,6\%0 | 1-7 | 2.34 |
| \% | 888 | 18 | 1.34 | 7 | 1,117 | 18 | 169 | 7 | 1,440 | is | 217 |
| 71 | 7it | 181 | 127 | $i \frac{1}{2}$ | 97.3 | 181 | 160 | - $\frac{1}{8}$ | 1,254 | $18 \frac{1}{8}$ | 2 C, |
| 8 | Giso | 119 | 120 | 8 | 85 | $19)$ | 15 | 8 | 1,102 | 19) | 1915 |
| $8 \frac{1}{8}$ | 60.3 |  | 114 | 818 | TS | 191 | 14.3 | $8{ }^{1}$ | 976 | $19 \frac{1}{7}$ | 185 |
| 9 | 5.37 | 20 | 108 | 9 | 675 | 20 | 1.37 | 9 | $88_{1}$ | 20 | 156 |
| 92 | 452 | $\therefore 2$ | 90 | $4 \frac{1}{2}$ | 60\% | 22 | 113 | $9 \frac{1}{2}$ | -82 | 22 | 1.40 |
| 10 | 4.35 | 2.4 | 75 | 10 | $54 i$ | 24 | 95 | 10 | 705 | 24 | 12.3 |
| 10. | 395 | 26 | 6.4 | $10 \frac{1}{2}$ | $+9^{6}$ | 26 | 8: | $10 \frac{1}{4}$ | 6.10 | 26 | 105 |
| 11 | 360 | 28 | 5.5 | 11 | $45^{2}$ | 28 | 70 | 11 | 58.3 | 28 | 90 |
| 11/8 | . 329 | 30 | 45 | $11 \frac{1}{2}$ | 414 | . 30 | 60 | $11 \frac{1}{8}$ | 5.3.3 | 30 | 79 |



## CUPRESSUS LAVXSONANA.

- THE ORIGINAI, SEEDLING IN THE LAHSON NURSEKIES. EDINBURGH


# $$
1875 .
$$ <br> Máarice Young's <br> CATALOGUE <br> OF <br> CONIFER A, AソD 

Fifurivg (1)mancoutal Tuces, Slyubs,

a*<br>wx.mandux.

MILFORD NURSERIES,
NEAR GODALMIING,
SURREY.

## LONDON:-

ROBFRT EDMUAD GAYLOR, HORTICUITERAR AND GRNERAL STEAM PRINTFR, 19, Old Sitreet, Goswell koad, E.C.

## YOUNG'S

## GOLDEN CHINESE JUNIPER,

## (Funiperus chinensis aurea.)

During the two years that this plant ha, been before the public, it has more than justified the high opinions given upen it by the Pr s, and the lealing Hortieulturists, both in England and on the Coni n nt, thit it is without doubt,

## "THE FINEST GOLDEN CONIFER OF THE DAY."

The plants in this Nursery, llespite the dry season, have grown as freely as the ordinary Chinese Juniper, and in cole ur have certainly surpassed that of any former years, so that I feel the greatest confidence in again recommending it to the notice of all lover; of IIardy Ormamental Trees.

It has been exlabitel at the following Shows, when the highest honoun were awarded to it :-

```
Royal Iorticultural Suciety... Aus. 2, 1S71, First Class Certificate.
Cryscal Yilace
```

$\qquad$

``` Aug. 5, 1871
Sept. 10, 1872
Glasgow and West of Scotland International liorticuleriral
"
                            "
Mancitester Horticlltural....... Sept. 10, 18\%2
                            " ",
Societe Royale n'Acriculture
et de Butanieue de Gand ......;
Mar. 3, 1873, First Class Silver Medal.
```

On each occasion receiving the highest encomiums.

## It has been supplied to-

Mer Majesty the Queen, Royal Gardens, Windsor.
II. K. II. the Prince of Wales, Sandringham.
II. R. II. Princf. Frederick William, Potsdam.
II. S. H. the Grand Duke of Hesse, Darmstadt.
II. M. the King of tie Belgians, Lacken.
-
Aso to many noblemen and gentlemen, and to the leading nurseries in England, : the Continent, and in America.

For description, see following extracts from Press reports:-

## Report from Gardeners' Chronicle, Sept. 7, 1872.

"Ccrtainly one of the foremost places amongst golden-lenved Conifers must be
 Juniper is well known as onc of the hardiest and handsomest of Coniferous Shrubs, and when we state that the novelty just referred to is the cxact counterpart of its parent;' in all but its colour, and that that colour is equal at least in richncss of hue to any golden Cunifer hitherto known, but little further mention of it is needed. We may however add, from a recent personal inspection of the stock, that it is thoroughly constant. Not a plant amongst the cntire stock shows the least tendency to run back ; but all, whether infants of 6 inches, or adolcscents of 3 feet high, appcar in the same aristocratic 'cloth of gold' array. There is, as wc have said, nothing whatever but the colour-and that is an important element from the decorative point of view-to distinguish this from the type form of $\mathcal{F}$ uniperus chinensis. The original plant, which stands about twelve fect high, and the upper half of which is a mass of gleaming golden spray, is a conspicuous object from the high road in passing the Milford Nursery. The golden portion originated in a sport of one of the leading shoots, and now forms the entire apcx of the plant, the lower half being of the ordinary green form. The colouration is not variegation strictly so called -not a sprinkling of yellow twigs or ycllow leaves over portions of the spray, but the whole plant is suffused with it as if it had been bathed in gold, and the colour becomes the more intense the more fully and freely the plant is exposed to the light and the sunshine. Our notes indicate that the propagated plants take on a close pyramidal habit, and have moreover the twofold character of foliage which is seen in the parent, and that the colour on the more prominent portions of the plant is as bright as the tint of the golden Holly. Taking thicse various points into account, and coupling with them the free-growing hardy character of the plant, there is no exaggeration in prounouncing this novelty to be une of the best and most desirable of ornamental Conifers. 'All is not gold that gliters,' but in this golden Juniper Mr. Young has found what should prove to he a treasure."

Extract from Gardeners' Mugjazine, June 29, 1872.
"A foremost position, however, must be accorded to Mr. Young's New Golden Chinese Juniper ( $\mathcal{G u n i p e r u s}$ chinensis aurea), a beautiful bright golden sport from the Chinese Juniper, originated at the Milford Nurserics. It retains its bright colour throughout the winter as well as summer, and it must become one of the most favourite Conifers ever introduced."

Ed. André in Clllustration Horticole, 1872, p. 309.
" Iuniperus chinensis aurea."-This variety, raised by Mr. Maurice Young of the Milford Nurseries, Godalming, is one of the most beautiful Conifers cver obtained. The original plant is about 12 feet in height, and is as it wcre covered with a cloth of gold. It is not a variegation, but a sheet of gold which covers the whole plant. None of the young plants show the least tendency to run away to the green type. This novelty is considcred one of the most striking that has becu introduced into England for many years.

Price for Strong Young Plants, 7s. 6d., ros. 6d., and 2 1s. each. Larger Specimens, 42 s., 63 s., and 105 s. each.

## MAURICE YOUNG'S

 CATALOGUE OF CONIFERE, HARDY ORNAMENTAL Trees, Shrubs, and Evergreens.
## AUTUMN 1874.

## CONIFERÆ.

## PINUS (The True Pine).

ARISTATA each
A pine found on the snowy mow $L$ s in rth America, attaining there a height of from 30 to 40 feet. It is if the Strobus type, very disti it in hatit and usefut as a variery cellections.
AUSTRIACA-THE Black I'ine of dustria.

Syn. ni ricans.
Gool plants, I 1013 ft , per 100 ,

$$
\begin{aligned}
& \because \quad \text { " } 1 \frac{1}{2} \text { to } 2 \mathrm{ft} \text {., } \quad, \quad 160-250 \\
& \because \quad, \quad 2 \text { lo } 3 \mathrm{ft}, \quad, \quad 30 \quad 0-40 \quad 0 \\
& \text { ". " } 3 \text { to } 4 \mathrm{ft} \text {., per doz. } 6 \text { 0- } 120 \\
& \text { 4. 5, \&i 6ft., ., IS 0-30 0 }
\end{aligned}
$$

A rapid growing tree, attalni-g a he he of Bo to 100 feet, dense in hat $t$, lark green in the $c$ loir of iss flage, and val-a le for planting as sireens $\uparrow$ for sheter, on al nt of iti ir at h situess and free growith. The tumber being v ry f nous, 1 m g g and durable when of good age.
BEARDSLEYI $\qquad$ Groxl plants, per doz 24 o- 30 o Syn. fon lerosa.

A Large umber tree fond in Calif rnia and the North-West Coast of Aracrica. limber valua le ; quite hardy.
BENTHAMIANA .........Good plants, 2 to ; and 4 ft., per doz $300-400$ A very lofy tree, aloo fr me the mus cait s of C.alif rnia, grow ing to a great hei ht; the f lage dark green and very long; handsome in its y ung state, and event ully nating a nuble tree. limber said to be the lest of all the pine tribe.
CEMBKA-SWISS STONE PINR ...N゙ice young plants, 2 to 3 ft ,

$$
4 \text { to } 5 \mathrm{ff} \text {, per doz }
$$

A native of the highert monntains in Switreriand and Siberia, height 50 to 80 feet, ere $t$ and close iruwing in 12 t , rezularly firnshel with branches, wh h are thi kly c-rered woth glaucous green foliage. Timber sort, fine in grain, and very fragrant; it furnishes the wnd from which the Tyr lese sherherds and peacants c $1 t$ the curious litule men and animals so widely and well knownall over Europe.
DENSIELORA .................................... 9 to 12 in ., per 10030 o-
Native of China, of compact liabit and deep gieen foliage.
EXCELSA-N゙EPAL
Joung transplanted plants, per $100210-300$
2 to $2 \frac{1}{f f}$., per doz. 18 o- 240
Growing on the mountains from 6000 to ro,000 feet elevation; a fat gr wing tree, sometumes reaching a heizht of iso fect. Timber soft, white, and resinous.
INSIGNIS-ThF: RemiRkabi f PiNe ...food plants, perdoz. 12 o-24 o
Sery appropriately natned: as to colour and general appearance, it is quite d anct from any other pine. The ithage is a brigltt rich grass greme, thi kly set on the branches. It makes a handworne tree of from 80 to 100 fert. and thrives best on h hh stitat ons not too much exposed: in low damp places it is sumeumps killed or mjured by scyere winters. It is a native of Calffurma.

## JEFFREYII

From Northern Calıfornia; described as a noble tree, growing 150 feet high, and 4 feet in diameter. The foliage is 8 or 9 inches long, and greyish-green in colour. A very distinct and hardy pine.
LAMBERTIANA
A large tree from the high. Timber white and soft ; tree very hardy.
LaRICIO-The Corsican Pine $\qquad$ Young plants, per 100 3 to 4 ft ., per doz. A lofty rapid-growing pine, 80 to 130 feet high, similar in general character to $P$. Austriaca, but more pyramidal in growth; it is a valuable tree for general planting. 'limber resinous, coarse, and clastic, but durable.
MACROCARPA $\qquad$ .Good plants, 3 to 4 ft ., each A large tree, 8o to roo feet high, on the moumains of California ; leaves 9 to 10 inches long, of a glaucous-green. Habit of tree vigorous : very hardy.
MONTICOLA $\qquad$ Good plants, 6 to 8 ft ., each A rapid growing pine of the Strolus or Weymouth type, found in California; 80 to roo feet high, very hardy and makes a handsome tree.
MUGHO $\qquad$ Young plants, per doz.
Syn. uncinata.
Specimens, 6 to 8 ft., each
A native of Central and North-Western Europe, forming a tree $3^{\circ}$ feet high, of dense habit and dark green colour. Timber heavy and durable.
PONDEROSA. See BEARDSLEYII.
PYRENAICUM[ ................................Good plants, each from Syn. Monspeliensis.
" Fenzlii.
A very handsome tree, 60 to 80 feet high, from the Pyrences. The form of the tree is good ; the reddish-brown colnur of the bark, and the bright pale green foliage render this a very desirable trec.
Strobus-The Weymouth Pine $\qquad$ . .3 to 4 ft. , per 100
$160-30 \quad 0$ Goud plants, 4 to 7 ft ., per doz. $90-180$
A native of Canada and parts of the United States, making a tree 100 to 150 feet high. Timber light, free fron knots, and easily worked.

- COMPRESSA .cach
A divarf variety of Weymouth Pine, of dense habit, would be suitable to place on a iawn, where such a bush is required.

$$
\begin{array}{llll}
\text { s. } & \text { s. } \\
2 & 6 & 5 & 0
\end{array}
$$

## ABIES (The Spruce Fir).

> ALBA-The White Spruce Fir... Plants, iS to 24 in ., per $100300-400$ 3,4 , and 5 ft ., per doz. $60-18 \circ$
> A native of Canada and North America, growing to a height of 40 to 50 feet : it forms a regular pyrande ; folinge silvery-grey, and light bark.
> ALCOQUIANA .......................................... Plants, each age, very silvery underneath. As the plant grows large, it becomes very beautiful.

Canadensis-Hemlock Spruce ...Good plants, 3 to 6 ft., per doz. 6 o- 180
A large tree, 80 to 100 feet in Canada and North Anerica. It has a graceful drooping habit, small green leaves, glaucous underneath, and may be fitly styled the Weeping Willow amongst Conifers ; it delights in rather a moist situation, and is a very desirable plant.

- NANA

A compact conical form of the preceding species, having the ends of the shoots drooping ; originated in this Nursery and not $y$ et sent out.
DOUGLASSI
$\begin{array}{cccccc}\text { Good plants, } 1 & \text { to } 1 \frac{1}{2} \mathrm{ft} \text {., per } 100 & \ldots & -70 & 0 \\ , " & 10 \cdot 2 \mathrm{ft} ., & 10 & 0 & -100 & 0 \\ , " & 2 \text { to } 3 \mathrm{ft} ., \text { per doz. } & 12 & 0-18 & 0\end{array}$

|  | DOUGLASSI good plants, 4 to 5 ft ., per doz. <br>  <br> This hardy, noble, and valuable tree deserves to be extensively planted, as is is not only one of the uost ornamental, but one of the best tumber trees of all the firs. it is rapic in growit, verfanh, me glaucous beneath. it is from the North-West Coast of Alperica and Cal fornia, where it forms magnificent trees 200 feet high, and $\delta 10$ 10 feet in diameter. <br> ENGELMILNNI <br> ......each <br> ... -5 <br> EXCELSA-COMMDN NORWAY Spruce, Plants, 3, 4, 5, and 6ft., <br> per doz. $60-18$ |
| :---: | :---: |
|  |  |
|  |  |

EXCELSA CLANBRAZILIANA

- COMPACTA.

ELEGANS.
GREGURYANA.
Pど(iMA:A.

- PYRAMID.MIIS

$$
\text { Price, each } 26-76
$$

All dwarf varielles of the Common :pruce.

- ERECTA each 6 An uprii ht variety of Spruce.
HOOKERIANA Goot plants, each $26-36$
Syn. Pattomi.
From Ca imiz, and describod tha nagniticent tree, altaining a height of to to 300 feet; wh n grown freely it is very pretty and quite hardy.
MENZIESII ................... Young plants, $2 \frac{1}{3}$ to $3 \frac{1}{\text { fin., per doz. }}$
$\ldots$ - 40
Large planke, 5,6 , an 1 7it., per doz $05.120-18 \circ$
From $\mathcal{F}$, thern Culif rnaz, a treer $t$ zofet bigh, pyran ival in $f \mathrm{rm}$, de se in habit, $f=1 \mathrm{l}^{\circ}$ green abovt and very silvery bel w, giving to lurge trees a very beatif 1 appearance in suml sht $1 t$ is quite liandy, and del git in rit most -1 I mber of firit.rate quality
MERTENSMANA-CALIForvias Illmlock Spruck.
Giock plants, per dor. is o- 240
Syn. Albertian:
," Willumsomiz.
'A hand nie fast growig tree, of fr m 100 tu E o fect k gh, int Oregen and Ciliferniz. His very !ardy, and in ge e al appearance re'enibles the Herulock Sifuce previousi'y described.
NIGRA-Tite Black Spruce ........Plants 2 to 3 ft., per $100400-750$ 4 to 5 ft., ver doz. 12 o- 130
Of close symmetrical hal it in uts y. ufg growth. eve"tually making a treest $v$ i feet h: is brithe, elatic, and trong. The plant thrnves best in rich moist sit-at: int.
ORIENTALIS-THE Eastern Spricen, nicc little plant-, 9 to $\mathbf{I}$ Sin.

$$
\begin{array}{rrr}
\text { Goud plants, each } & 3 & 0-16 \\
\hline
\end{array}
$$

Found in the mountains of the Caucasus an ! 1 e ' 'tin. It is a dense-growin derk green plaut in its young state, nd f rmsa a lofly tree of 70 ur 80 feet, very bardy.
POLITA .............. ..............................Good plants, each $50-106$ A new species from Japan, a very vigorous grower, distinct and haudrome.
Sieboliti- Japan hemlock Spruce ....................each 3 6-5 o Syn. Abies Tsugr.
", Trusa Sucblaii.
A tree of frorn 30 \%) to feet in height. of similar laabit to the Hemlack Spruce Alses Canailensis . The leaves are much shonter. and the general clazacter sufficiently di- tunct to make it a desirable plant in al collections.
$\qquad$
A dwarf form of the above.

## PICEA (The Silver Fir).

## AMABILLIS-The Lovely Silver Fir, grafted plants with leads

s. d. s. d.

This is the true species described by Loudon, as sent liome by Douglas. It has dark glossy green leaves, slightly glaucous underneath, and thickly set on the branches, which are regularly disposed on the stem. It is very scarce, no seed having been sent home since the original cones in 1831.
CEPHALONICA $\qquad$ Good plants, per doz. A native of Cephalonia, and inakes in this country a very handsome conical-shaped tree if planted on ligh dry situations. It is very liable to injury by spring frost if grown in valleys or low places, but otherwise perfectly hardy.
MAGNIFICA
Syn. Nobilis robusta.
From California; and a really magnificent tree. The foliage is of a glaucous green, thickly set on the branches. It forms a handsome pyramidal tree, perfectly hardy.
NOBILIS
Seedling plants, 9 to 12 inches, per 100


A truly noble tree, attaining in California the height of 200 feet. It has regular spreading branches, thickly covered with bluish-green foliage. It is of majestic appearance, free growth and perfectly hardy.
NORDMANNIANA-Nordmann's Silver Fir.
Young plants, per 100
I $\frac{1}{2}, 2$, and 3 ft . ; pcr doz., $18 \mathrm{~s} ., 240-420$
Fine specimens, 6 to 8 ft ., each 21 o - 63 o A splendid tree, common on the Crinuear mountains, growing to the height of 100 feet ; the branches are dense, regularly disposed on the trunk, and covered with dark green shining leaves, slightly glaucous below. The young shoots in spring are most delicate green, forming a beautiful and striking contrast to the ricll deep colouriug of the old leaves. Timber good. This Fir should be extensively cultivated, as it is one of the hardiest and most ornamental of all the Silver Firs.

- PENDULA

A weeping varicty, not yet in commerce.
PARSONSII
Good plants, cach from ros. od., $21 \circ-63 \circ$
Syn. Lowizi.
" Lasciocarpa.
This beautiful Pine has the same general character as Nobilis, but is distinct in the form and colour of the foliage ; equally hardy, and can be confidently recominended. It attains a large size in California, and is of rapid growth.
PINSAPO $\qquad$ Good plants, 2, 3, and 4 ft ., pcr doz. $24 \circ-42 \circ$ Spccimens, $5,6, \& 7 f$ t. each io $6-210$
A native of the mountains in Spain, where it forms a fine tree, 60 or 7oft. high, rather conical in shape, and of compact habit; a very desirable tree for single specimens.

## CEDRUS (The Cedar).

## africanus-Mount atlas Cedar.

Plants $1 \frac{1}{2}$ to 2 ft ., per doz. $60-120$ 4 to 5 ft . ", Syn. Atlantica. Fine specimens, 8 to 1 oft.
A noble tree, from the Atlas Nountains, reaching a height of 100 feet, similar in character to the $C$. Libani, except that it is of more rapid growth, and paler in the colour of its foliage.


## CEPHALOTAXUS (The Cluster-Flowered Ycwu).

DRUPACEA ...................................... Good plants, each I 6-2 6
Syn. Forturis -mina.
A fine compart evergreen tree In China and Japan 20 to 30 feet high, and perfectly Lardy.
FORTCNEI... ............................................Plants, each ... - 26
Syn. Fortmai Nfascula.
A hardy evergreen tree from China and Jop-n, 30 tn 40 feet high, folage lonier than the preceding, and the plant more loose is habit.
PEDUNCU'ATA ……….........Goul plants with leads, each $50-76$ Syn. Ta.xus Marra, tonaz.

A handsime small evergreen tree, 20 to 30 feet. (hina and Japan. Quite hardy

## CHAMOECYPARIS.

SPHCEROIIEA AUREA
each
$50-106$
A sariety of she White Cedar, of pramridal falit, briget green folage, the, ug shunts $f$ a bright gnden col "r; of rece tiatioduction, but it promives to be a very landsome plans.

## CRYPTOMERIA (The Japan Cedar).

ELEGANS
Goorl young plants, 1 ft , per doz $\begin{array}{r}18=12 \\ 18 \\ 5\end{array} 0-300$ $\begin{array}{lll}2 \text { to } 3 \mathrm{ft} . \\ \text { Specimens, } 4 \text { to } 5 \text { ft. each } & 18 & 0-10 \\ 5 & 0\end{array}$ A useful and very beautiful introduction from Japau, of close pyra idal hal t, foliuge brighen giees th suturner, changing sometimes toar h p prople, at others ts a reiddah-brown during the winter fienths. It is lery hardv, and makes a good plant, in a smidl state, fr winter bedd ng. or cven for pot cuit ref fur the flower-stand or conservatory.
JAPONICA SP'RALITER FALCATA........................each
A very crrious variety of robtet hatut and thick teaves, which are twier d roun- the brau hes in many difetent forms.

- ALB. 1 V.ARIEG.ATA ................................................. $26-50$
A) wasf varitety, having the young shoots white.



## CUPRESSUS (Cypress).



NUTKAENSIS. See THUJOPSIS BOREALIS.

## JUNIPERUS (The Y̛uniper).

All the species and varieties of Jumiperus enumerated in this Catalogue are handsome evergreen shrubs, suitable for shrubbery or single specimens on lawns where it is not desirable to have irees which would grow to a larte suze.


LARIX (Larch Fir ).
See FORESI TREES.

## LIBOCEDRUS.

## CHIIIENSIS

 .eachA handsome evergreen tree from the Ch lian Andes, growing there from to thon feet high, the f liabe is of a bight green, glautous at the sules. It is only q ite har ly in favurable situations.
——DECURRENS. See Thuja gigantca.

## PRUMNOPITYS.

ELEGANS
Good plants, 1 to 2 ft , per doz. $12 \circ-24 \circ$
A very handsome tree from the mountans of Chils, prowing, at an elevati $n$ of $5, n o, 206,000$ feet, to the height of 50 or 6, feet: in a young state it looks sumething 1 ke a varirty of lew, but afterwards is sand to resemble in habit the Abies loughiassi.

## PSEUDOLARIX.

KEMPFERI<br>Plants, cach 3s. 6d. 7 s. 6 - 42 d.<br>Syn. Larix Ḱempferi. Specimens, price on application.<br>> " Alies Kempferi.<br>> This is the Golden Larch of China, a very valuable and beautiful tree, the foliage in the spring and sumnuer being of a beautiful bright green, if to 2 inches long, and rather broad; the colour deepens towards autumn, when, before falling, it assumes a rich goldenyellow. It will form a large tree in this country, and its extreme beauty cannot fail to recommend it to all lovers of handsome trees.

## RETINOSPORA.

All the species of this genera have been recently introduced from Japan ; some of them make trees of size, but most are dwarf in habit, forming pyramids or bushes. All are hardy and evergreen.
ERICOIDES .Good plants, per doz. 6s.A conical compact bush, greyish-green in summer, and zurningpurple in winter; admirably adapted for winter bedding or pots.
FILICOIDESPlants, each
laright green foliage on reddish stems; should be grown as a bush, when it makes a pretty fern-like plant.
FILIFERA......................................... Good plants, each
Makes a pyramidal bush, with the ends of its shoots drooping in long filaments, some of which are tesselated.

- GRACILIS each
A more slender form of the above.


## LEPTOCLADA

Plants, per doz.
Specimens, each
A slow-growing pyramidal bush, of a dark bluish-grcen, very pretty for winter beds or pots. It is quite a miniaturc tree.
LYCOPODIOIDES
A distinct.
OBTUSA - "Tree of the Sun,"
Good plants, I to $I \frac{1}{2} \mathrm{ft}$., per 100 $1 \frac{1}{2}$ to 2 ft ,
2 to 3 ft , per "doz.
$90-120$
$26-216$
$16-106$
$26-106$
$9 \quad 0-12 \quad 0$
$36-76$
$36-210$

$$
\begin{aligned}
& \ldots \\
& \ldots \\
& \ldots
\end{aligned}
$$

$$
\begin{array}{lllll}
2 & \text { to } 3 & \mathrm{ft} \text {., per doz. } & \ldots & -15 \\
3 & \text { to } 4 & \mathrm{ft} ., & , & 18 \\
4 & 0 & 30 & 0
\end{array}
$$

A tall evergreen tree, growing from 70 to 100 feet high, of great

$$
4 \text { to } 5 \mathrm{ft} .
$$ beauty; thrives well in this country, and planted as single specimens is very handsome. It is also a good shrubbery plant, and as it bears clipping well, it will be a good plant for hedges. The timber is described as white and fine grained, and highly valued by the Japanese.

## ALBA

Plants, each
Similar in general character to the former, rather more compact in habit, and the young shoots pure white during the spring and summer months. A very beautiful variety, new and scarce.
_ AUREA ............................................... Plants, each
A rapid-growing variety, also of the same habit as obtusa, and having the branches suffused with gold.
ERECTA
Plants, each
An upright form.
-
GRACILIS ............................................... Plants, each
Rather dwarf in habit, very compact, a rich dark green.
_ NANA ............... ...................................... Plants, each
Very dwarf and compact, forming a pretty litule bush, of a rich deep green. deep green.

- ALBA VARIEGATA

Plants, each
General character like the preceding, with many white spots on the foliage.

$$
36-150
$$

$26-106$
1 $6-26$
$26-50$
$36-76$

36-50

OBTUSA NANA AUREA
Plants, each A compact dwarf bush, with foliage of a rich bronzy-yellow, very desirable.

- PUMILA ......................................................each

Torms a dwarf bush.
PISIFERA
Good plants, 1 to $1 \frac{1}{2} \mathrm{ft}$, per 100 $\begin{array}{ll}\text { ", } & 1 \frac{1}{2} \text { to } 2 \\ 2 & \mathrm{ft.} \text {., } \\ \text { ", } & \text { to } 3 \\ 3 & \mathrm{ft.,} \mathrm{per} \mathrm{doz.} \\ 3 \text { to } 4 \mathrm{ft} .,\end{array}$ 3 to 4 ft ., , A ree of more slender growth than $K$. obtusa, paler green in the col ur, and the points of the shouts drooping. It is a very graceful plant, and certainly worthy of cultivation.
ER1.CTA ........... .......................................each
A compact upright furn of the above, foliage of pale green, distinct.
VARIEGATA AUREA
Voung plants, each
A dwarf oush, blirsh-grey foliage spotted with pale yellow. A curiosity: rather scarice.
PLUMOSA, young plants, per doz., 95. to 125 ; ; good plants, each
A mot bea-uful, compace, pyrumidal tree, of a soft grey-green colour, light and graceful in hatit, and a most desira le fant; useful for winter beddag, pots, or to frm specimens for lawis.
ARGENTEA
...each
ACREA per doz. 9s., Fine plants, each
$2-50$
$120-180$
$50-21 \circ$

-     - PUMILA.
,. ... -6

FLATESCENS
... -26

- Variegata alba

The above five varieties of plamosia are sim lar, in their general character, to that spee es. A goonten is ipped wot white: antea is a $m$ at beanuif $!$ a dien culour, and the of the most effective decora-
 a dwart-grewing kind: tari ata what it a char ng phe t. its sefi grey, b whish folse beirg distion itly and bentufily phitted with clear white, inak nif thr flint apprar covered w th small snow-fiakes. F/wem saz aud its varietles are sonetimes taken as frma of pisif ra. but, on c mparing the botanical feat ires of ech, and cimpodering the great ifflerence in ha i, 1 think piumosa nust be a dist inct species, aiud a wrer and the rest earictics, and un no spectic manner alived to fís ira.
SQUARROSA, twe
Good plants, per doz., 9:- 1 Larger plants, each
$26-106$

A very elegant pyramidal bush, points of the shoots drooping a d feathery Colour silverv-blu - grey, very effective in small plants for bedd ing, and making nice epecimiens where a plant of large size is not required. A pretty and desurable plant.

## SALISBURIA.

adiantifolia-Tue Maden Hair Tree.
Sym Ginko biloba. Plants, each I $6-50$
A large deciduous coniferous tree. Native of Japan.

## SCIADOPITYS.

verticiliata-Tie Umbrella Pine
Plants, each
So called from having it leaves arranged on the points of the shoots in whorls in the form of an open umbre la. It makes a compact conical tree, about 20 feet high, of slow growth, but very handsome.

## TAXODIUM.

s. d. s. d.
DISTICHUM-Deciduous Cypress.
Plants, 4, 5, and 6ft., each16 - 26
PENDULUM .Plants, each
26 - 3 ..... 6
Both having very handsome light foliage in spring and summer, turning to reddish-brown in autumn. The latter plant, aluhough generally known as $T$. distichum pendulum, is no doubt T. Sinensis, also called Glyptostrobus heterophylla. I have this year found in my Nursery amongst sone Taxodium distichum, a very distinct weeping form to which the name of "pendula" may be nore properly applied.

## SEMPERVIRENS ALBA VARIEGATA <br> Each <br> A variety of $T$. semperyivens, having the ends of the snoots a beautiful creamy-white; very handsome.

x 6 - 106

## TAXUS (Yczu).



## THUJA (Arbor Vitc).

The Abor Vitas are natives of both hemispheres, and to distinguish the one from the other, botanists bave divider them into two divisions-the term "Biota" being applied to the Chinese or Eastern Arbor Vitxes, whilst to those of America, the appellation of "Thuja" is still retained. The two sections being so very distinct in habit and character, I have thought it best to publish them according to their botanical arrangement, taking the Biotas or Chinese Arbor Vitæs first. These are mostly large bushes or small trees, and are natives of China, Tartary, North of India, and Japan.

", ," filiformis.

A bush, or small tree, from Chinese Tartary, introduced abour the year 1800 , and recently found also in Japan. It has drooping fiiform shoots, and may be considered more curious than beautful.

## THUJA.

(NATIVES OF NORTH AMERICA).

## ERICOIDES

per doz. $60-120$
A plant of doubfful origin : it forms a dwarf conical bush, glaucousgreen ins sumner, and of a brownish cint in winter. Suitable for small beds or for pottiug.

,, Libocedrus decurrens.
Makes a lofty tree in California of 120 feet high, is rapid in growth, with rich deep green leaves; a thoroughly good plant.
ALBA VITTATA
A form of the preceding, having the tips of the shoots creamy-white; a very beautifil variety, originated here, and not y'et in commerce.
LOBBII .................................Good plants, 3 to 4 ft., per 100
Syn. Thuja Menziesia.

| 4 to 5 ft ., <br> 5 to 6ft.. per "doz. $188^{\ldots} \circ-30$ |
| :---: |
|  |  |
|  |  |

A tall, rapid growing tree, found on the north-west coast of America. In colour it is a bright rich green, the back of the young branches a reddish-brown. A very ornamental tree, and useful either in the shrubbery as single specimen, or for hedges; its rapid growth and close habit render it superior to all other Arbor Vitzes for this purpose.
oCCIDentalis-American Arbor Vithea, 2 to 3 ft., per 100 $\begin{array}{lrrr}4 \text { to } 5 \mathrm{ft} ., & 20 & 0-50 & 0 \\ 5 \text { to } 6 \mathrm{ft} ., \mathrm{per} \text { doz. } & 9 & 0-18 & 0 \\ 6 \text { to } 8 \mathrm{ft} ., & , & 24 & 0-36\end{array}$
Also a good and well-known plant for hedges.
ARGENTEA
..each
... - 76
LUTEA
,
$50-76$
Two varieties of American origin, the former producing young shoots white, the latter being a golden form and retaining its colour all the year, but like all purely golden plants, much brighter during spring and summer.
— VARIEGATA ALBA..........................................each ... - 26
Foliage spotted with white.

- VERVAENANA
Plants, per doz. 12 o IS o
A rariety having the surface of the foliage of a yellow cast.
PYGMAEA
Plants, per doz. $180-300$
Grafted on stems, 12 to 18 inches $306-7 \quad 6$
A very dwarf kind of Thuja, or perhaps a Retinospora, from Japan. Foliage rich green, with reddish-brown bark. Curious, and well adapted for rockery.
WAREANA .........................Good plants, $1 \frac{1}{2}$ to 2 ft., per 100 - 250 5 to $6 \mathrm{ft} .$, per doz. $1200-750$
A most useful, compact, and hardy evergreen shrub, for general planting and shrubberies. Having a large stock, I can offer it at the above low rates.


## THUJOPSIS.

BOREALIS ..............Good plants, $3,4,5$, and 6 ft ., per doz. is $0-60 \circ$ Syn. Cupressus Nutkaensis.

A tall evergrecn tree from Nootka Sound and the north-west Const of North Aneric:i, where it attains the height of 100 feet. It is conically pyramid in habit, of a light but glossy green, sometimes having a bluish shade; it grows frecty in this country, and may be confidently reconmiended as one of the best of the Cypress or Arbor Vitze kind jeet introduced.

## AUREO-VARIEGATA

A variety lraving a number of the branchlets of a bright golden yellow ; it criginated here, and will, doubtless, prove one of the most handsome of all variegated Conifere. Not yet sent out.
COMPACTA ..................................................each
A conical compact form, of a beautiful bright bluish-green.


Is a form of the preceding, but spotted with white variegation: new, and a very handsome plant.
DOLABRATA
Good plants, per doz. $120-600$ Specimens $106-210$

$$
\begin{aligned}
& \text { A few specimens, each } 4^{2} 00-15000
\end{aligned}
$$

Perhaps the most distinct and beautifal of all the recent introductions from Japan, where it forms a tall evergreen tree. The habit of the plant here is pyramidal, and the colour of is foliage is a baght dark green, glaucous below. Young plants have leen ont in this nursery for several years past, and it is without of t a choroughly
hardy pant.

- VARIF:G.ATA.
..Good plants, per doz. $120-30$ 0
A few specimens, each $42 \quad 6-150$ 0 LETEVIRENS

Young plants, each
I shonild think this $:$ be a variety of $D-h_{2} h_{n+1} h_{2}$ whith has been dwarfed by cultivation, and which is kn wn in Japan under the name of "Nezu:" it is exa tly hike T. Dolahrats a muxh maller ac ale. 1 have plants gr wing freely, and every year it seciss to appriach neaver to what I beheve to be its in rma ispe Nevertisele s is is a very pretty Ittle plant, with branches and leaves l ke a delt ate Lycopodium, and for the fernery or as a pot plant it is very desirable.

## STANDISHII

Guod lants, each
A good hardy tree from Japan, hiving a stra zht stem an 1 drooping

## TORREYA (The Californian Nutmeg).

> MYRISTICA ............................................... Plants, each
> Nerada of Corls plant, growng fr m 20 to 40 feeth $\mathrm{g}^{2}$ in the Sierra
> Nevada of Califroia, quite hardy.

## WELLINGTONIA (The Mammoth Tree of Califorina). GIGANTEA

A variety wut golden variegaton.

Hampers, Baskets, Crates, \&c., are charged as low as possible. Half-price will be allowed on them if returned at once in gooi $i$ comatition to Milford Station, Carriage paid, and advised by post.

## Where practicable, M. Y. would invite an inspection of his Stock, which extends over 100 acres of ground.

## Accounts duc Midsummer and Christmas. Post-Office Orders payable at Godalming.

[^12]
# Hardy Ornamental Trees, Shrubs, and Evergreens. 

Each.
s. d. ${ }^{\text {Each. }}$ d.
Abele. Sec Populus.
AbELIA-
UNIFLORA ABELIA-
A very pretty plant for training on a wall.
A very pretty plant for training on a wall.
ACACIA. See also Robinia, page 29.
ACACIA. See also Robinia, page 29.
nemu
nemu A new Acacia from Japan, similar in folliage and habit to the Australian species, and having a beantiful rose-coloured blossom; it is said to be perfectly hardy', but has not yet been proved in this country. In favoured situations it will no doubt do well.s. d.$-2+1$
ACANTIAPENAX -
HORRIDA VARIEGATA$26-50$A pretty silver-variegated shrub, of dwarf habit, half-hardy, andsnitable for pot cultivation as a decorative plaut, or for bedding insummer.
ACER (MTaple)-
COLCIIICUM RUbRUM ..... 6
A handsome species; the leaves from the beginning of the season
till late in the autumn a bright pinkish-purple.
CRISPUM .....  106A new species from Japan.DISSECTUM- FOLIIS ROSEO-MARGINATUS - 50$3^{\cdots 6-5} \quad 76$Two sbrubby trees, natives of Japan, with small palmate leaves,the former of bright green, the latter having a delicate rose-colouredmargin.
eriocarpum (Sir C. Wager's Mraple) ..... each
NEGUNDO$\ldots$-.. 6$\cdots 0-10$
$\cdots 6$The former a species from North Ancrica, height 30 to 40 feet,rich green foliage; the latter a beautiful silver variegated variety,of similar labit, and cither, as a single specimen, or planted ingroups, is very effective. It may also be used as dwarf plants; and,planted with Parple Hazel or Copper Beech in masses, forms a inostclarming bed. It bears cutting well.
Pal.matumA sinall tree from Japan, green palmate foliage, sometimes edged
with reddish-brown......................................................A very beautiful variety, the foliage of a bright green, veined withgold.
palmatifidum
A most beantiful Japanese species, very finely aud deeply cuppedleaves of a bright pale green, very elegant and distinc!

- ORNATUM
A very fine varicty, with rich dark brown foliage, very handsonc.
Roseis marginatis.A variety of the above, variegated with red and white marginedfoliage, a very rare and beautful plant. 1
platanoides (Noravay Muple). 7 to 8 ft ., pet 100 5
$50-106$

50 A fine timber trec, growing from Norway to Switzerland, helght 40 to boft., leaves turning a clear yellow before dropping, producing a fine autunnal tint. Timber easily worked, and takes a fine polish.
AUREO-MARGINATUS
A fine variety, with gold margined foliage.


## ALTHAA-



> s. d. s. d.

- DOUBLE BloSSOMED ..................................................
... - 90
- silver margised variety of these well-known showy autumn flowering shrubs.
AMYGDALUS (Almond)-
Single and Double .............................................. o 9 - 16
Pink-leaven Peach (Neu) \&....................................... ... - 26
Double Peacif .................................................................. 10
ANDROMEDA, in varicty .. ..................................per doz. $90-180$
ARALIA-
Siebolimi, or Fatsia Sieboldii
I 6-50
A shrubby growing bush from Japan, having large shining palmate leaves on long foot-stalks arranged in clusters on the tops of the shoots, tolerably hardy, cut only in severe winters: a good plant for either summer or winter decoration on account of its very striking and exotic appearance.
SPINOSA
1 $6-26$
A prickly single stemmed plant with large pinnate leaves.
ARBORVITAE. See Thuja, Conifera.
ARBUTUS -


ARUNDINARIA-
FALCATA .................................................................................. 26

- ALBA VARIEGATA .................. .................................. - 36
- AUREA VARIEGATA $+\ldots . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .$. .......... 36

Hardy Bamboo from the Himalayas, particularly handsome.
ARUNDO-
CONSPICUA, strong ............................................per doz. 12 o- 18 o
A recent introduction from New Zealand, in habit and blossom similar to the Pampas Grass; good for cover.
DONAX (Italian Reed)
26
Very handsome, growing 8 to so feet.

- Variegata

26
MAURITANICA. ................................................................. 26
ASH-
Weeping, on straight clear stems, 6 to 8 and io feet ......... 2 . $6-50$

## AUCUBA-

JAPONICA, good young plants ............................per ioo 30 o - 50 o
-_ larger bushes per doz. $180-420$
NEW AUCUBAS, see page 3 r.

BAY. See Laurus.
BEECH. Sce Fagus.









The most rapid-growing of all the Poplars. The timber is soft, casily worked, and makes good boards for flooring.

## PRIVET. See Ligustrum.

## PRUNUS-

SINENSIS FLORE PLENO.................................................... I 0 - 16
TRILOBA .................................................................. - I 6
Two beautiful spring-flowering shrubs.

## PTEROCARYA-

CAUCASICA ................................................................................... 16
LAEVIGATA ................................................................................. 6
PYRACANTIIA-
Red and White
6
PYRUS JAPONICA. See Cydonia.


These may be reckoned amongst the most beautiful of our springflowering trees. The Siberian Crab, in addition to its blossoms, bears a very handsome small scarlet fruit. Floribunda deserves especial notice, as one of the most free-flowering: the buds are of a rich crimson; white when expanded. Spectabilis has deep rosccoloured flowers, as have also the other varieties.
QUERCUS (Oak)-
CERRIS (Turkey Oak)
6 to Sft., per doz.
$90-120$

- PENDULA (Wiepings)
$50-76$
- VARIEGATA (Silver Siripcid )............................................
$26-50$
coccinea (Scarlel Oak) ......................................................... doz $90-120$
Filictalita
ilex (Evergreen Oak) ........................................per doz.
- variegata nigra, render them all valuable as decorative trees in our woodland scenery.


TAXUS. Sce Conifere.
TAXODIUM. See Conifera.


## WILLOW <br> weeping. Sce Salix.

YEW. See Taxus, Coniferr.
YUCCA (Adam's Neulle)-


## Neiv Aucubas． <br> $-0-$

Since the introduction of the Male Aucubz and several new varieties from Japan， great improvements have been made in this most useful Evergreen．

Having paid great attention to their cultivation，I can offer fine plants both of seedlings and varieties at the following low rates ：－
Strong Plants， 91012 in ．，in eighteen varieties $\qquad$ per doz．125．to 10.

Larger sizes，i2 to iSin．，and ilalf－specimeiss，according to size and variety
Standari）Alycubas，in fruit，full of berries，very handsome for winter and spring decuration．
．．from 10,610210

## Male Varieties．

BICOLOR．
LONCIFOI IA
MACLIA1A．
MEDIO ARGENTRA．
ovara．
HYC．M FA．
SULPIIIREA．
VIRIDI以。

## Female Varieties．

ANGUSTIFULIA．
AURERA．
KLEはAN\％。
GRANDIDENTATA．

## Female Varieties．

## M』CV゙LATA．

HIMALAlCI． I．ATIM．ICtLTA． I．IMBATA，or f＇SCJA． 1．NVLIF JLIA． 1）ENT 「 NA MヘCRいIONTII． OV\＆${ }^{\circ} \mathrm{I}$ ． MICTLRATA． StI．PHL゙KEA．
VIRIIIS．
DIECIA，having male and female on the s me plant．


Noten－Ah fidn＇s hore offered are frim the apen grunt，and from whithout frotecion．

## CONIFER压，RHODODENDRONS，\＆C．，

 hardy orvamental plaits for wivter deddh．g．CHEAP EVERGREENS FOR COVERTS，\＆c．， CLIMBING PLANTS，FRUIT AND FOREST TREES．

A complete Descriftice Catulogue of Conifere，Rhodedentrons and other Ameriall：P’ants，Roses，Hardy Ornamental Trees，Shrubs，and Fïer－ greens，Plunts for Winter Belding，cheap Eeversceens for Cozerts and Slerubleries，Climbing Plants，Fruit and Furest Trees，is published every Autumn，and will be formarded on appliation．

Plans and Estimates for laying out new，or improving existing Parks and Grounds，prepared and executed．

1


[^0]:    * 'The spiral vessels are very small, and only perceptible in the young shoots of Pinus and Aloies.

[^1]:    * The name "Abies" is said by some writers to be derived from "Apios," a pear-tree, the cones being like its fruit ; while others derive the naune from " $A$ beo," to rise or spring up, in allusion to its aspiring babit of growth, and which Prior so impressively describes in the following lines:

[^2]:    - The original seedling plants of what is called C'upressus Lambertiana, had the same creet habit as those of Cupressus maeroearpa; and if the points of the leading sloots are taken off yomng seedling plants of Cupressus macroearpa, the plants will afterwards assume the same spreading habit as those known as Cupressus Lambertiana.

[^3]:    * Major Madden relates, while travelling in Kooloo and the Ladakh comutry, sonne of his people had liegun to strip, the cypress trees of their dis hrathehay for fue!, whell one of the ennchuctors of his caravan cance to him in great agitation, and implored him to command the men to desist, is the trees, he said, were sured to the deities of the clements, who would be sure to revethe any injury done to them, by visiting them with heavy sh hes and had weather on their journey.

[^4]:    * Sume writers derise the word .Jmiperus from " Thuiores pariens," the young and old leaves and herries heing on the plant at the same" time: lut the plant having heen nsed for purpones of abotion, obviously give its true derivation from "Juvenus" and "Pario."

[^5]:    *The original phant of Pic an arandis, at Elvastun, raised in 1:31, from Douglas's seeds, proves the ider.tity of the true kind.

[^6]:    * Lapeyrunse give the name of pimpunier to two different line The prescut one which is that of loudon's Arboretum and all English collections, and th the Pinus Bratea, of Tenore, which is the pegrencricu of Parlature and Carriere, and a kind by no means plentiful ont the Fyrences, whereas the present one forms vast forests in those regions.

[^7]:    * I figure and desrription of this pine was first given in the Procecdmots of the Cremon Committee in 1854 , under the name of J . lialfouriana.

[^8]:    * I have retained the original name Retinơspora, as it is now so generally used in garden literature, in preference to Chameeyparis, to which Retinospora is so very closely related, to prevent any further confusion.

[^9]:    WHEN IN FLOWER THESE ARE OBJECTS OF WONDERFUL BEAUTY.

[^10]:    PKIN\&EW WV HENROE ANH SONS, LONDON AND WIRWY.

[^11]:    Each．
    s．d s．d．
    ULMUS－
    betilempolis， 2 to 3ft．．．． 10
    Gobifasis sold ．．．．．．．．．．．． 20
    INClSA … ．．．．．．．．．．．．．．．．．．．．． 16
    latifola alba metlata 16
    rabifgita．．．．．．．．．．．．．．．． 16 fi to 8 ft ．．．．．．．．．．．．．．．．．．． 26 ．．． 36
    MONTME Yaths， 4 to $6 \mathrm{ft} \ldots 1 \mathrm{~b}^{\circ} .20$
    VIMINALIS PENDCLLI．．．．．．．．
    stindards ．．．．．．．．．．．．．． 26
    SEPFRBA VALHEG．ATA ．．． 10
    standants ……．．．．．．． 20
    Chinensis，3ft．．．．．．．．．．．．．．． 30
    Nearly evergreen．
    GL．IBAA ．．．．．．．．．．．．．．．．．．．． 10 ． 16
    sCIMPST0）Y Y－ry（＊icampton
    Weep $\because$ ），ons stems， 8 to
    Ifft．，very fine ．．．．．．．．． 36
    Ǩati（l＇lanのu），froun Jupan $16-26$
    
    si या ！wint ．．．．．．．．． 6
    
    ift．$\quad . .$. ．．．． 16
    NEFI BARIEIITA．．．．．I 6
    （1．sib）$=15$（ryizat or II at iguluti， 5 th 6 ft ．， per dez． 6090
    （ 1 ｜ャ｜，．．．．．．．．．．．．．．．． 16
    1）IMITFRI， 4 to fift．．．．． 1 f $2 n$
    IMAR INATA，fito Fft．．．．． $110-1$ fi
    tastiolata（ELetín）
    statularis，s to llff． 1 ค 1 B
    MTIFOLAAIfA MOTIMTA I 6
    PENitta ics preedion
    If $\left.\mu^{t} n g\right)$ stamelards．22 $6 . .50$
    extra flio …．．．if
    1Lemons， 5 to di．．．．．． $16 \ldots 26$
    Btolift．．．．．．．．．．．．． 2 f．． 3 B
    Aな\＆゙，… ．．． 27 ． 3 B
    protrerisa，itofit．．． 10 ．． 16
    PYRAMDALIS VARIFIATA 16
    Shbria，4tobft．\＆urdo\％．＂U
    （\＄theit．＂，1） 0
    SUBFRUN A ，$f$ to tift．．．．． 10
    SAHIFITI ．．．．． 1 合
    26
    VElCSCHAFF＝ITT ．．．．．．．． 76
    VIBURNUM－
    1ANTivA ．．．．．．．perdoz． 60 ．．．！ 0
    Lf SIT INRETV L．ATIFULIVM， 10
    GHLES（OETLDER ROFY，）
    ner doz．
    

    VIRGILIA
    I．I TEI， 2 to $3 \mathrm{ft} . \ldots .$. ． 1 fi
    7 to Fit．．．．．．．．．．．．． 26
    WEIGELIA－
    Amablis …．．．．．．per doz． $30 \ldots 40$
    HORTESGIS NISEA，＂2 to 3ft． 10
    hosp．a，el to 3ft．．．．per doz． $60 \ldots$ ？ 0
    varieciata， 12 to Imin．

    $$
    \text { per doz } 90
    $$

[^12]:    Goods can be conveyed, without unloading, to any Station on the principal Raikuays in England and Scotirnd ly this means much time is gained, besides atoiding a great deal of ingury rekich fregserthy occurs in wrloading and reloading.

